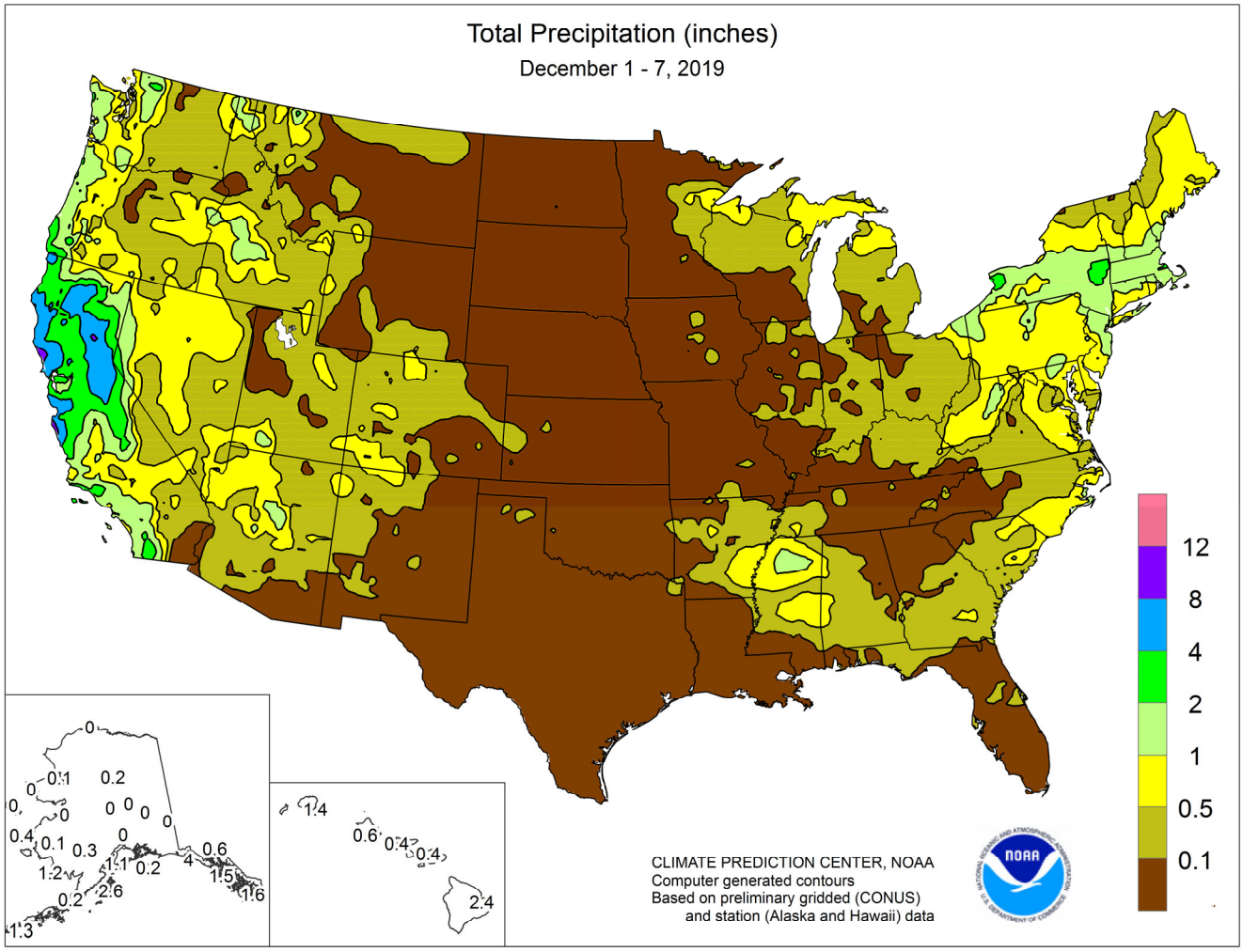
Volume 106, No. 50 http://www.usda.gov/oce/weather December 10, 2019

WEEKLY WEATHER AND CROP BULLETIN

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service

U.S. DEPARTMENT OF AGRICULTURE
National Agricultural Statistics Service
and World Agricultural Outlook Board



HIGHLIGHTS
December 1 – 7, 2019

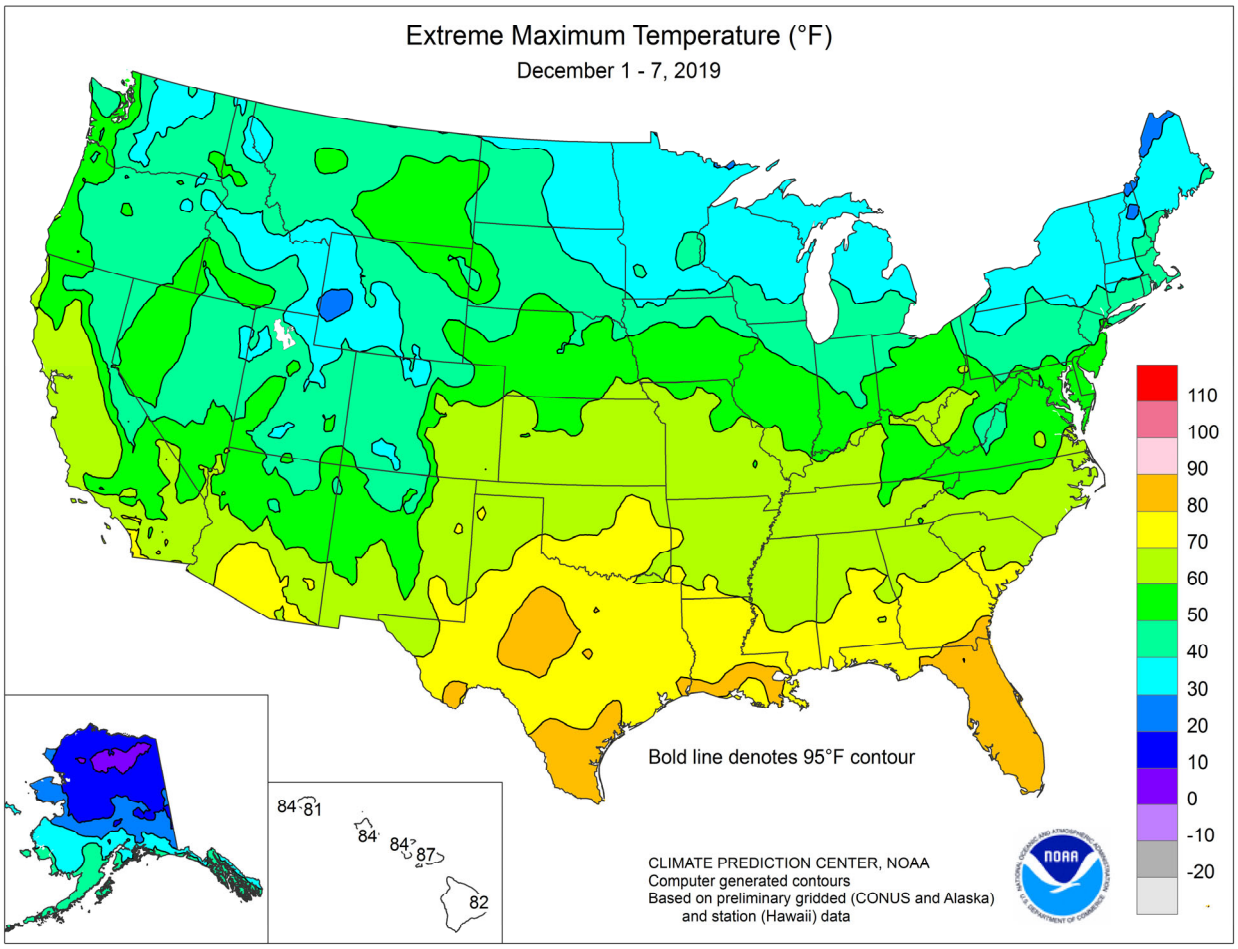
Highlights provided by USDA/WAOB

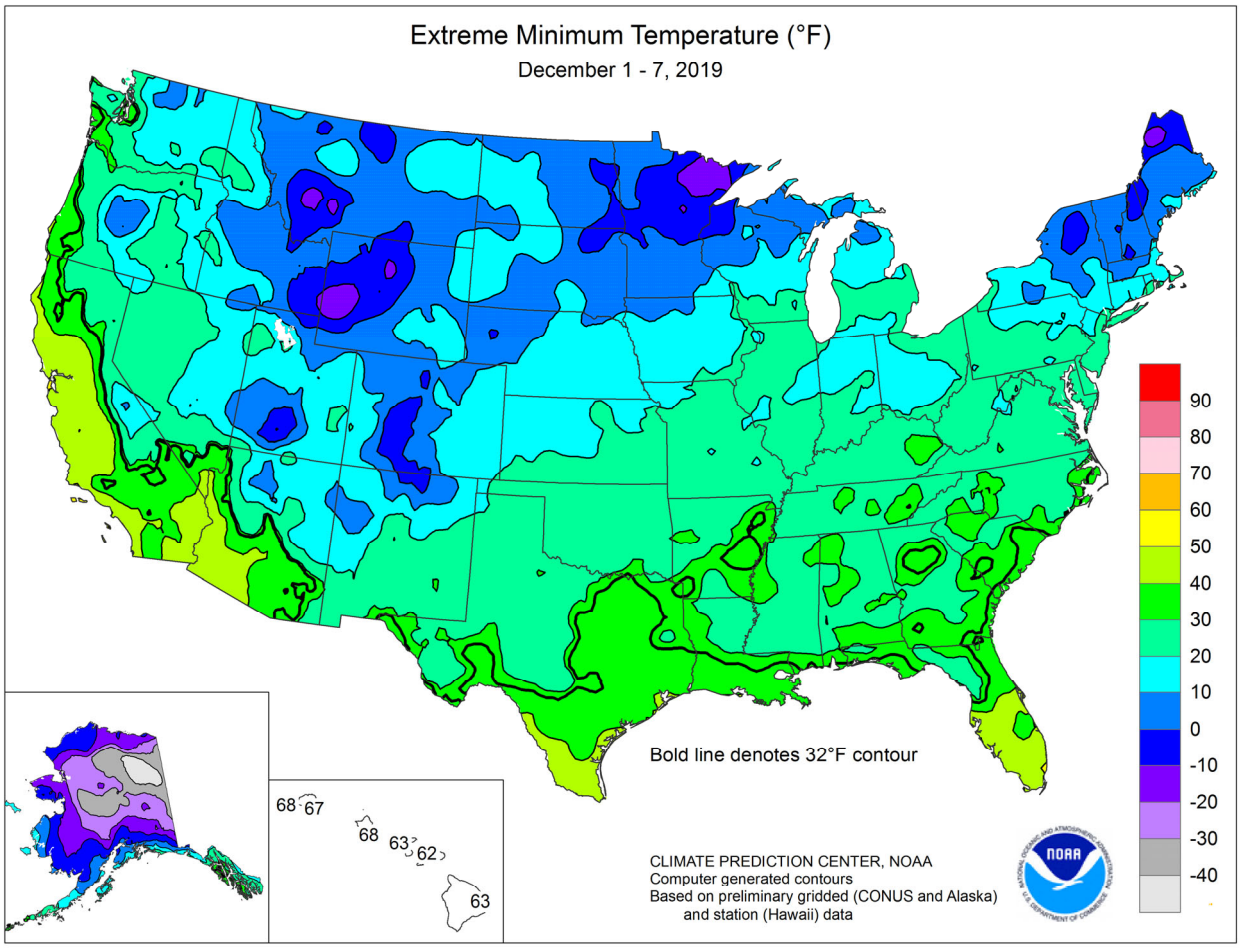
Mostly dry weather prevailed in the **Midwest**, but a persistent snow cover across the **northern Corn Belt** continued to hamper late-season corn and soybean harvest efforts from the **Dakotas to Michigan**. Meanwhile, mild, dry weather covered the **nation's mid-section**, eroding winter wheat's protective snow cover across the **northern High Plains** and maintaining stress on drought-affected rangeland, pastures, and winter wheat on the **central and southern Plains**. In fact, near- or above-normal temperatures prevailed from the **Mississippi Valley**

(Continued on page 3)

Contents

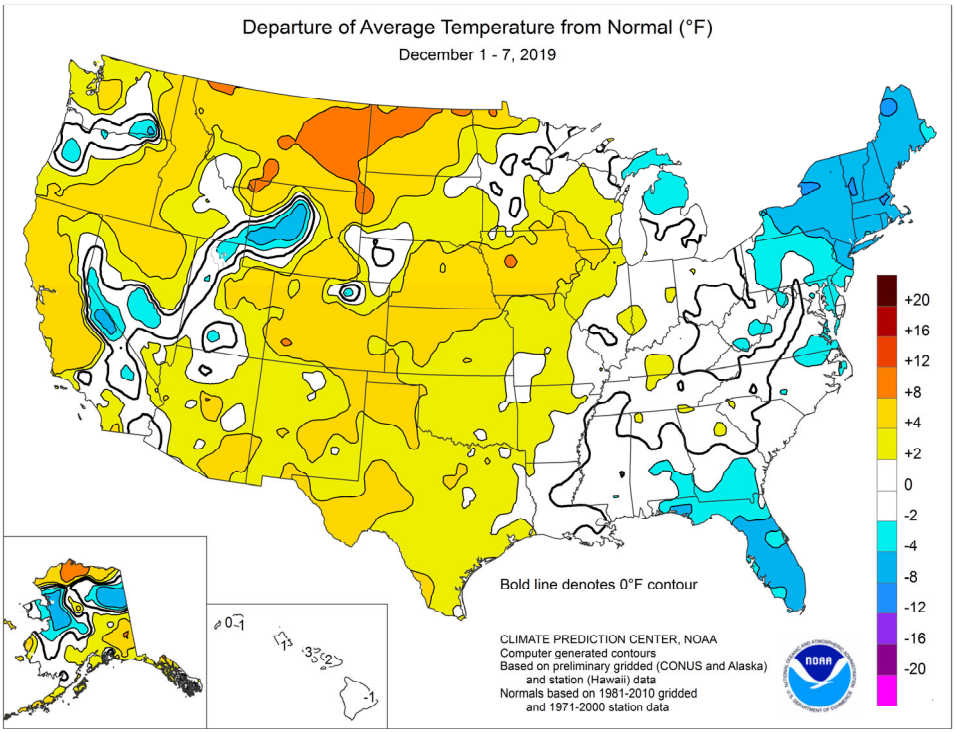
Extreme Maximum & Minimum Temperature Maps.....2
Temperature Departure Map 3
December 3 Drought Monitor & Snow Cover Map.....4
National Weather Data for Selected Cities 5
November Weather and Crop Summary 8
November Precipitation & Temperature Maps 13
November Weather Data for Selected Cities 16
National Agricultural Summary &
U.S. Sunflower Harvest Progress, 2014-2019.....17
Crop Progress and Condition Tables.....18
International Weather and Crop Summary 19
Bulletin Information &
December 4 Satellite Image of Pacific Storminess.....28


Extreme Maximum Temperature (°F)
December 1 - 7, 2019
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
84
81
84
84
87
82
Bold line denotes 95°F contour
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data
NOAA


Extreme Minimum Temperature (°F)
December 1 - 7, 2019
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
68
67
68
63
62
63
Bold line denotes 32°F contour
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data
NOAA

(Continued from front cover)

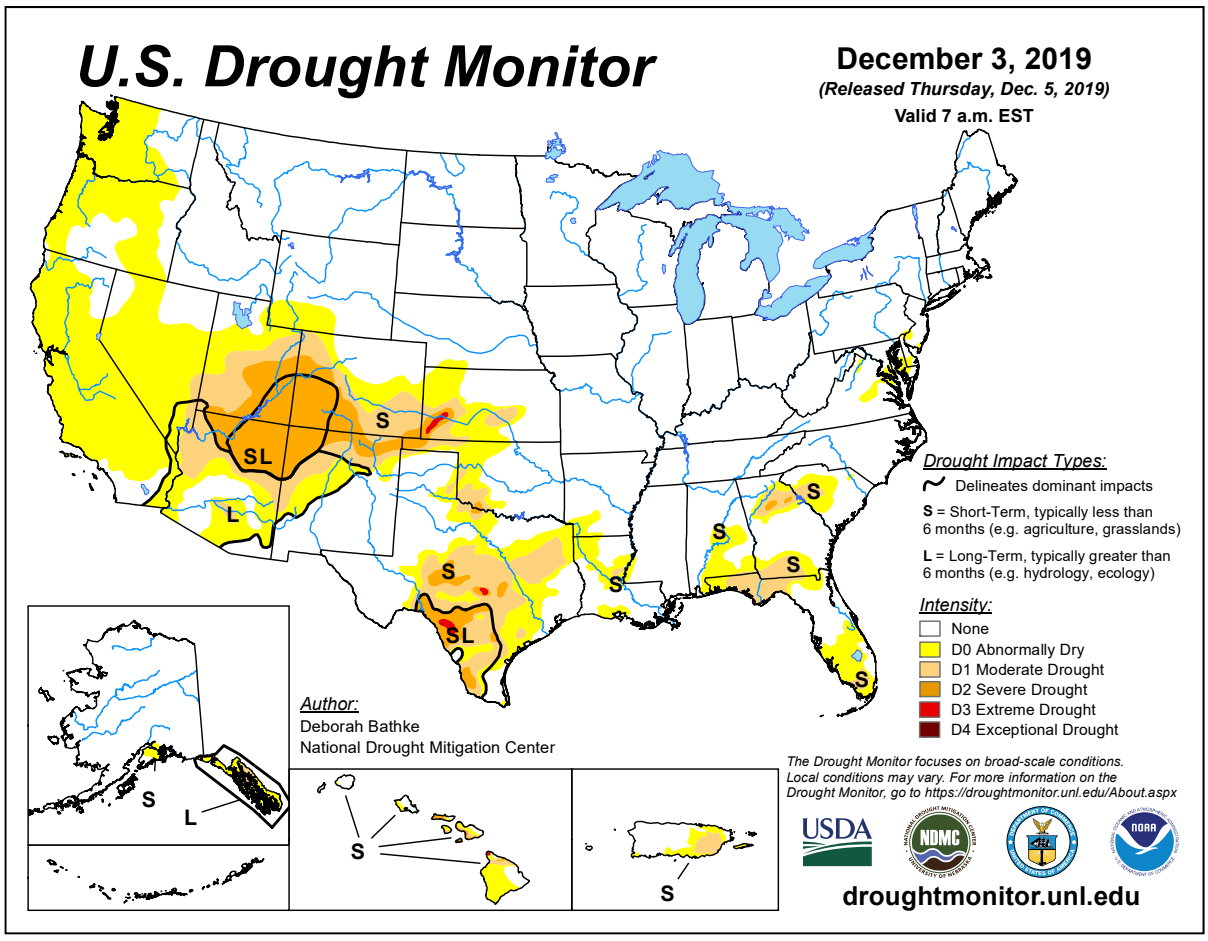
westward, except in some **Western** mountain valleys. Weekly temperatures averaged more than 10°F above normal in scattered locations on the **northern High Plains**—but were at least 5°F below normal across the **Northeast** and much of **Florida's peninsula**. The cold weather in the **Northeast** occurred in conjunction with a major snowstorm. Early-December snowfall in parts of the **Northeast** totaled 1 to 2 feet or more. Farther south, however, short-term drought continued to affect parts of **Florida**. Most other areas in the **East** experienced generally light precipitation. Elsewhere, stormy weather returned across the **West**, especially late in the week. Some of the heaviest precipitation, which included high-elevation snow, fell in **northern and central California**. Despite some **Northwestern** precipitation, snowpack remained less than 50 percent of the early-December average across portions of **Oregon**, **Washington**, and **northern Idaho**.

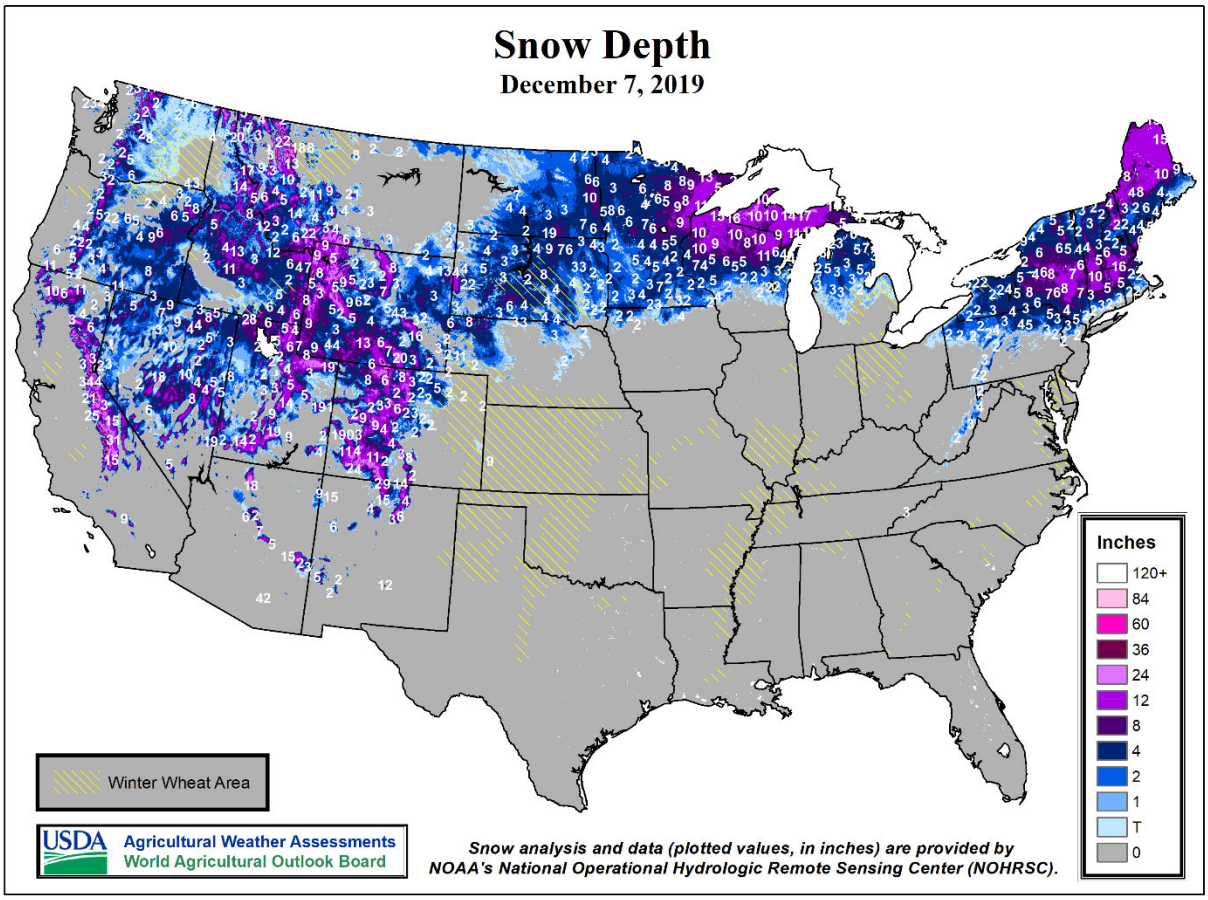


From December 1-3, an impressive, early-season snowstorm unfolded across the **Northeast**. Three-day snowfall totals reached 22.6 inches in **Albany, NY**; 20.8 inches in **Manchester, NH**; 17.0 inches in **Worcester, MA**; and 16.5 inches in **Hartford, CT**. Closer to the **Atlantic Coast**, snowfall included 8.6 inches in **Portland, ME**; 7.1 inches in **Boston, MA**; 5.5 inches in **Providence, RI**; and 1.6 inches in **New York's Central Park**. For **Albany**, where the 22.6-inch snowfall represented the greatest single-storm total since March 1993, snow fell continuously for more than 39 hours. **Albany** also reported consecutive daily-record totals (13.3 and 6.8 inches, respectively) on December 1-2. Other daily-record snowfall amounts included 8.9 inches (on December 1) in **Worcester**; 9.6 inches (on December 2) in **Binghamton, NY**; and 4.8 inches (on December 3) in **Boston**. Downwind of the **Great Lakes**, precipitation persisted through mid-week; **Buffalo, NY**, netted a daily-record precipitation total of 1.13 inches (4.5 inches of snow) on December 4. Meanwhile, precipitation overspread the **West** on December 4, when daily-record totals included 1.27 inches in **Paso Robles, CA**, and 0.81 inch in **Tonopah, NV**. During the first 8 days of December, precipitation in Paso Robles totaled 3.19 inches (818 percent of normal). At week's end, another round of rain and snow arrived in **California**. Record-setting precipitation amounts for December 7 in **northern California** totaled 2.72 inches in **Redding** and 2.22 inches in **Mount Shasta City**. In the **Sierra Nevada** foothills, **Blue Canyon, CA**, netted precipitation totaling 8.50 inches from December 1-8.

As the month began, cold weather lingered across the **Intermountain West**. Record-setting lows for December 1 dipped to -18°F in **Big Piney, WY**, and -12°F at **Utah's Bryce Canyon Airport**. Before warmer weather arrived, **La Grande, OR**, posted a daily-record low of 8°F on December 3. Meanwhile, chilly air also settled across **Florida**, where temperatures on December 3 remained below the 60-degree mark as far south as **Daytona Beach** (high of 58°F). Later, warmth developed across the **Plains** and **South**. In **Texas**, record-setting highs for December 5 rose to 84°F in **San Angelo** and 83°F in **Abilene**. On December 6 in **Louisiana**, daily-record highs climbed to 84°F in **New Orleans** and 81°F in **Lake Charles**. Warmth also developed in **California's Central Valley**, where **Sacramento** closed the week with consecutive daily-record highs (68 and 67°F, respectively) on December 6-7. **Stockton, CA**, with a high of 70°F, also notched a daily-record high for December 7. Elsewhere on the 7th, mild weather on the **High Plains** resulted in a daily-record high of 57°F in **Miles City, MT**.

Colder, drier air overspread much of **Alaska**, although lingering warmth resulted in weekly temperatures averaging at least 5°F above normal in the southeastern part of the state and across the northern tier. Late-week temperatures dipped to -30°F or below in portions of **central and east-central Alaska**, with **Bettles** reporting lows of -30, -31, and -30°F, respectively, from December 5-7. Significant precipitation fell, however, across parts of **southern Alaska**. During the first 7 days of December, precipitation totaled 2.53 inches in **Kodiak** and 2.73 inches in **Sitka**. Farther south, somewhat cooler weather (near-normal temperatures) developed across **Hawaii**, accompanied by an increase in precipitation. Late in the week, snow blanketed the **Big Island** peaks, mainly at elevations above 12,000 feet. From December 1-7, rainfall at the state's major airport observation sites ranged from 0.39 inch (55 percent of normal) in **Kahului, Maui**, to 2.40 inches (85 percent) in **Hilo**, on the **Big Island**. Still, Kahului's December 6 daily sum of 0.36 inch exceeded the total of 0.24 inch that had occurred in the preceding 9 weeks (63 days), from October 4 – December 5.


U.S. Drought Monitor
December 3, 2019
(Released Thursday, Dec. 5, 2019)
Valid 7 a.m. EST
Drought Impact Types:
Delineates dominant impacts
S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)
Intensity:
None
D0 Abnormally Dry
D1 Moderate Drought
D2 Severe Drought
D3 Extreme Drought
D4 Exceptional Drought
Author:
Deborah Bathke
National Drought Mitigation Center
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx
droughtmonitor.unl.edu


Snow Depth
December 7, 2019
Inches
120+
84
60
36
24
12
8
4
2
1
T
0
Winter Wheat Area
Agricultural Weather Assessments
World Agricultural Outlook Board
Snow analysis and data (plotted values, in inches) are provided by NOAA's National Operational Hydrologic Remote Sensing Center (NOHRSC).

National Weather Data for Selected Cities

Weather Data for the Week Ending December 7, 2019

Data Provided by Climate Prediction Center

STATES AND STATIONS		TEMPERATURE ˚F						PRECIPITATION							RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS			
																	TEMP. ˚F		PRECIP	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE DEC 1	PCT. NORMAL SINCE DEC 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL	BIRMINGHAM	60	38	71	31	49	0	0.34	-0.70	0.25	***	***	47.80	95	85	38	0	1	2	0
	HUNTSVILLE	57	38	66	29	47	0	0.03	-1.28	0.02	***	***	56.07	105	77	51	0	1	2	0
	MOBILE	65	43	73	30	54	-1	0.56	-0.64	0.55	***	***	59.40	95	88	48	0	1	2	1
	MONTGOMERY	64	37	73	30	51	-1	0.33	-0.90	0.33	***	***	42.09	82	85	37	0	3	1	0
AK	ANCHORAGE	29	20	36	9	24	5	0.34	0.12	0.13	***	***	13.94	92	81	74	0	7	4	0
	BARROW	10	1	18	-8	5	12	0.04	0.04	0.02	***	***	11.54	286	86	75	0	7	3	0
	FAIRBANKS	7	-7	21	-24	0	4	0.01	-0.13	0.00	***	***	14.26	147	81	77	0	7	1	0
	JUNEAU	38	32	44	30	35	4	1.61	0.44	0.55	***	***	54.45	101	93	89	0	5	7	1
	KODIAK	39	32	48	22	36	4	2.56	1.00	2.11	***	***	65.55	95	69	59	0	4	4	1
	NOME	17	2	30	-9	10	-2	0.14	-0.11	0.14	***	***	26.45	167	84	79	0	7	1	0
AZ	FLAGSTAFF	45	22	48	13	33	1	0.87	0.46	0.64	***	***	24.86	116	98	55	0	7	3	1
	PHOENIX	71	50	75	42	60	4	0.10	-0.07	0.10	***	***	5.34	71	74	48	0	0	1	0
	PRESCOTT	51	32	56	22	41	2	0.28	0.00	0.22	***	***	15.11	83	93	52	0	3	3	0
	TUCSON	72	46	76	38	59	5	0.00	-0.17	0.00	***	***	12.52	111	78	48	0	0	0	0
AR	FORT SMITH	59	36	72	30	47	2	0.01	-0.98	0.01	***	***	66.17	160	89	45	0	2	1	0
	LITTLE ROCK	58	38	67	32	48	2	0.11	-1.17	0.08	***	***	59.95	126	83	40	0	1	2	0
CA	BAKERSFIELD	65	49	70	45	57	8	0.20	0.06	0.20	***	***	7.79	133	74	53	0	0	1	0
	FRESNO	61	48	68	45	55	8	1.34	1.09	0.95	***	***	11.41	113	90	76	0	0	3	1
	LOS ANGELES	67	55	69	51	61	2	1.03	0.71	0.98	***	***	15.32	131	72	58	0	0	3	1
	REDDING	56	46	66	37	51	4	5.22	4.28	2.91	***	***	39.68	133	94	88	0	0	6	4
	SACRAMENTO	61	49	68	46	55	7	2.91	2.40	0.91	***	***	22.92	143	96	70	0	0	5	4
	SAN DIEGO	68	55	72	49	62	3	1.34	1.12	1.18	***	***	12.61	130	91	67	0	0	3	1
	SAN FRANCISCO	61	53	66	50	57	6	1.76	1.18	0.65	***	***	21.53	121	87	79	0	0	6	1
	STOCKTON	61	50	70	47	56	8	2.95	2.56	0.91	***	***	16.52	133	93	84	0	0	5	3
CO	ALAMOSA	42	11	47	-1	26	5	0.02	-0.06	0.02	***	***	7.50	107	85	55	0	7	1	0
	CO SPRINGS	54	25	65	16	39	8	0.00	-0.06	0.00	***	***	11.81	69	76	27	0	7	0	0
	DENVER INTL	45	23	58	8	34	3	0.12	0.05	0.12	***	***	15.32	114	79	54	0	7	1	0
	GRAND JUNCTION	45	26	50	20	35	3	0.09	-0.02	0.09	***	***	8.11	95	84	62	0	6	1	0
	PUEBLO	59	22	70	14	40	7	0.00	-0.08	0.00	***	***	12.89	107	83	49	0	7	0	0
CT	BRIDGEPORT	41	29	49	22	35	-4	0.69	-0.09	0.63	***	***	44.46	107	73	58	0	5	2	1
	HARTFORD	38	25	44	16	31	-4	1.67	0.83	0.79	***	***	46.17	106	75	55	0	7	3	2
DC	WASHINGTON	48	36	53	32	42	-2	0.52	-0.15	0.50	***	***	39.62	107	77	53	0	1	3	1
DE	WILMINGTON	45	31	52	24	38	-2	0.67	-0.10	0.57	***	***	44.73	111	85	44	0	5	3	1
FL	DAYTONA BEACH	71	45	82	37	58	-5	0.03	-0.56	0.03	***	***	55.67	118	98	44	0	0	1	0
	JACKSONVILLE	70	42	84	31	56	-2	0.00	-0.55	0.00	***	***	41.48	83	89	41	0	1	0	0
	KEY WEST	79	67	83	61	73	-1	0.00	-0.45	0.00	***	***	27.68	74	80	57	0	0	0	0
	MIAMI	78	59	85	53	69	-3	0.13	-0.43	0.13	***	***	60.85	107	78	44	0	0	1	0
	ORLANDO	73	49	84	43	61	-4	0.20	-0.35	0.20	***	***	43.30	93	82	41	0	0	1	0
	PENSACOLA	66	45	74	33	55	-2	0.26	-0.64	0.26	***	***	45.66	75	89	48	0	0	1	0
	TALLAHASSEE	67	39	80	29	53	-3	0.08	-0.77	0.08	***	***	35.67	59	83	40	0	2	1	0
	TAMPA	71	53	80	46	62	-4	0.08	-0.43	0.08	***	***	56.34	131	84	51	0	0	1	0
	WEST PALM BEACH	76	53	83	47	65	-5	0.01	-0.96	0.01	***	***	53.99	91	86	45	0	0	1	0
GA	ATHENS	61	40	69	33	51	3	0.40	-0.40	0.40	***	***	41.57	93	66	37	0	0	1	0
	ATLANTA	59	42	67	35	50	1	0.04	-0.87	0.04	***	***	39.63	84	65	40	0	0	1	0
	AUGUSTA	64	37	72	29	50	0	0.32	-0.25	0.32	***	***	45.08	107	80	39	0	2	1	0
	COLUMBUS	62	39	70	32	51	-1	0.27	-0.74	0.26	***	***	41.18	91	83	34	0	2	2	0
	MACON	64	36	71	28	50	-1	0.11	-0.72	0.11	***	***	35.94	86	85	35	0	5	1	0
	SAVANNAH	66	42	77	33	54	0	0.32	-0.18	0.32	***	***	45.86	97	85	44	0	0	1	0
HI	HILO	77	66	82	63	71	-2	2.41	-0.73	0.90	***	***	91.61	77	93	83	0	0	7	1
	HONOLULU	83	72	84	68	77	1	0.63	0.06	0.41	***	***	15.60	98	80	65	0	0	2	0
	KAHULUI	84	68	87	62	76	2	0.39	-0.19	0.36	***	***	10.77	66	80	68	0	0	2	0
	LIHUE	80	71	81	67	75	1	1.44	0.38	1.00	***	***	32.79	91	92	84	0	0	6	1
ID	BOISE	43	31	51	20	37	4	0.24	-0.09	0.14	***	***	13.59	122	86	75	0	4	4	0
	LEWISTON	49	35	54	24	42	6	0.14	-0.11	0.14	***	***	12.16	102	74	61	0	2	1	0
	POCATELLO	38	22	50	0	30	2	0.24	-0.01	0.15	***	***	11.80	101	91	82	0	7	2	0
IL	CHICAGO/O'HARE	40	28	45	25	34	2	0.11	-0.53	0.11	***	***	48.14	140	87	66	0	7	1	0
	MOLINE	45	26	55	21	35	3	0.06	-0.50	0.06	***	***	47.54	131	86	63	0	6	1	0
	PEORIA	44	27	54	23	36	3	0.11	-0.56	0.11	***	***	50.11	146	85	59	0	6	1	0
	ROCKFORD	42	26	46	22	34	4	0.13	-0.43	0.13	***	***	49.68	141	84	67	0	7	1	0
	SPRINGFIELD	46	26	56	20	36	1	0.09	-0.56	0.09	***	***	46.11	137	89	59	0	7	1	0
IN	EVANSVILLE	51	32	59	27	42	2	0.11	-0.85	0.07	***	***	58.42	140	83	59	0	3	3	0
	FORT WAYNE	41	28	45	18	34	0	0.51	-0.18	0.51	***	***	37.42	109	89	64	0	6	1	1
	INDIANAPOLIS	45	29	50	22	37	1	0.25	-0.54	0.25	***	***	45.94	119	87	58	0	6	1	0
	SOUTH BEND	41	28	45	18	34	1	0.23	-0.55	0.20	***	***	44.14	118	86	67	0	5	2	0
IA	BURLINGTON	46	26	57	22	36	3	0.02	-0.55	0.02	***	***	43.62	120	87	56	0	6	1	0
	CEDAR RAPIDS	43	22	53	16	33	4	0.02	-0.41	0.02	***	***	40.93	126	98	65	0	7	1	0
	DES MOINES	44	26	58	18	35	5	0.17	-0.19	0.17	***	***	48.12	143	85	61	0	7	1	0
	DUBUQUE	40	24	47	20	32	4	0.03	-0.45	0.03	***	***	53.31	155	87	72	0	7	1	0
	SIOUX CITY	42	23	50	15	32	5	0.01	-0.18	0.01	***	***	32.79	128	90	73	0	7	1	0
	WATERLOO	43	24	53	18	33	6	0.04	-0.30	0.04	***	***	40.86	126	85	65	0	7	1	0
KS	CONCORDIA	53	28	62	22	41	7	0.00	-0.23	0.00	***	***	34.02	122	75	49	0	6	0	0
	DODGE CITY	55	26	62	22	40	4	0.00	-0.17	0.00	***	***	21.56	99	81	43	0	7	0	0
	GOODLAND	50	25	61	17	37	5	0.00	-0.09	0.00	***	***	23.01	118	82	56	0	7	0	0
	TOPEKA	52	26	63	22	39	3	0.00	-0.41	0.00	***	***	46.61	135	80	52	0	7	0	0

Based on 1971-2000 normals

***** Not Available**

Weather Data for the Week Ending December 7, 2019

STATES AND STATIONS		TEMPERATURE ˚F						PRECIPITATION							RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS			
																	TEMP. ˚F		PRECIP	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE DEC 1	PCT. NORMAL SINCE DEC 1	TOTAL, IN., SINCE JAN01	PCT. NORMAL SINCE JAN01	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	WICHITA	55	28	64	22	41	4	0.00	-0.33	0.00	***	***	40.44	138	73	49	0	6	0	0
KY	JACKSON	46	34	59	31	40	-2	0.61	-0.44	0.37	***	***	51.92	112	94	58	0	3	3	0
	LEXINGTON	50	34	62	29	42	2	0.23	-0.68	0.16	***	***	50.34	118	78	59	0	2	3	0
	LOUISVILLE	52	35	63	29	43	1	0.11	-0.79	0.07	***	***	51.20	123	78	47	0	2	3	0
	PADUCAH	54	32	63	24	43	2	0.00	-1.15	0.00	***	***	68.18	148	78	50	0	3	0	0
LA	BATON ROUGE	69	44	81	31	56	1	0.04	-1.12	0.03	***	***	62.12	105	89	37	0	1	2	0
	LAKE CHARLES	71	46	81	37	58	2	0.00	-1.05	0.00	***	***	65.07	121	86	43	0	0	0	0
	NEW ORLEANS	69	50	84	41	60	3	0.05	-1.22	0.05	***	***	59.79	99	76	47	0	0	1	0
	SHREVEPORT	65	40	73	30	53	2	0.00	-1.05	0.00	***	***	41.03	86	84	41	0	1	0	0
ME	CARIBOU	27	9	32	-2	18	-4	0.52	-0.19	0.51	***	***	39.46	113	85	61	0	7	2	1
	PORTLAND	35	19	43	14	27	-5	0.89	-0.11	0.44	***	***	44.83	105	84	50	0	7	4	0
MD	BALTIMORE	47	33	55	27	40	0	0.68	-0.06	0.62	***	***	36.05	92	80	53	0	3	2	1
MA	BOSTON	39	28	45	22	34	-5	1.23	0.37	0.64	***	***	45.86	116	75	54	0	7	4	1
	WORCESTER	31	21	37	13	26	-7	1.69	0.82	0.92	***	***	49.40	107	93	61	0	7	4	1
MI	ALPENA	33	19	35	10	26	-3	0.81	0.40	0.59	***	***	36.70	136	94	67	0	7	6	1
	GRAND RAPIDS	36	28	40	21	32	0	0.87	0.12	0.87	***	***	49.52	141	85	71	0	5	1	1
	HOUGHTON LAKE	31	20	32	13	26	-3	0.62	0.19	0.57	***	***	37.23	137	88	76	0	7	4	1
	LANSING	36	28	41	22	32	0	0.90	0.31	0.89	***	***	39.95	133	81	73	0	6	2	1
	MUSKEGON	39	29	44	24	34	1	0.58	-0.10	0.58	***	***	48.17	156	78	68	0	5	1	1
	TRAVERSE CITY	34	24	37	15	29	-2	0.83	0.25	0.71	***	***	40.92	130	86	68	0	7	4	1
MN	DULUTH	30	11	35	-11	20	0	1.72	1.40	1.72	***	***	36.13	119	83	67	0	7	1	1
	INT'L FALLS	28	10	33	-2	19	4	0.03	-0.17	0.03	***	***	33.39	142	86	62	0	7	1	0
	MINNEAPOLIS	35	19	42	12	27	3	0.07	-0.21	0.07	***	***	45.38	158	83	69	0	7	1	0
	ROCHESTER	33	18	37	10	26	3	0.07	-0.25	0.07	***	***	56.34	183	86	77	0	7	1	0
	ST. CLOUD	32	11	38	0	22	2	0.05	-0.14	0.04	***	***	42.60	160	93	66	0	7	2	0
MS	JACKSON	62	38	68	27	50	-1	0.50	-0.72	0.47	***	***	59.43	115	80	44	0	2	2	0
	MERIDIAN	64	38	69	30	51	-1	0.70	-0.53	0.70	***	***	59.81	110	82	46	0	3	1	1
	TUPELO	57	38	66	31	48	1	1.09	-0.28	1.09	***	***	72.07	141	79	52	0	3	1	1
MO	COLUMBIA	50	29	59	25	39	3	0.00	-0.72	0.00	***	***	48.48	126	79	51	0	6	0	0
	KANSAS CITY	51	28	61	21	39	4	0.00	-0.46	0.00	***	***	52.32	142	80	48	0	6	0	0
	SAINT LOUIS	51	30	61	25	40	2	0.01	-0.80	0.01	***	***	53.19	145	80	55	0	5	1	0
	SPRINGFIELD	51	30	61	23	41	1	0.00	-0.98	0.00	***	***	53.11	124	76	51	0	5	0	0
MT	BILLINGS	43	28	55	7	36	7	0.02	-0.11	0.02	***	***	22.08	155	71	49	0	5	1	0
	BUTTE	36	8	43	-14	22	2	0.00	-0.11	0.00	***	***	12.56	102	88	60	0	7	0	0
	CUT BANK	39	19	47	-3	29	5	0.00	-0.06	0.00	***	***	12.68	104	85	61	0	6	0	0
	GLASGOW	40	21	48	17	31	11	0.00	-0.06	0.00	***	***	19.43	178	82	73	0	7	0	0
	GREAT FALLS	42	29	53	17	35	8	0.00	-0.11	0.00	***	***	18.47	129	75	53	0	5	0	0
	HAVRE	38	19	46	-7	29	6	0.02	-0.06	0.02	***	***	13.60	123	81	71	0	7	1	0
	MISSOULA	36	23	45	5	29	3	0.00	-0.24	0.00	***	***	14.60	113	89	78	0	7	0	0
NE	GRAND ISLAND	46	26	52	15	36	7	0.00	-0.21	0.00	***	***	42.43	167	80	59	0	7	0	0
	LINCOLN	49	23	60	16	36	5	0.00	-0.26	0.00	***	***	34.02	123	82	57	0	7	0	0
	NORFOLK	44	23	51	13	34	6	0.00	-0.21	0.00	***	***	31.87	122	85	64	0	7	0	0
	NORTH PLATTE	48	19	56	12	33	4	0.00	-0.09	0.00	***	***	30.75	159	90	52	0	7	0	0
	OMAHA	47	25	56	18	36	6	0.02	-0.28	0.02	***	***	39.65	134	83	63	0	7	1	0
	SCOTTSBLUFF	46	19	53	6	32	4	0.00	-0.14	0.00	***	***	30.77	193	92	70	0	7	0	0
	VALENTINE	41	17	52	3	29	2	0.05	-0.05	0.05	***	***	35.70	185	82	68	0	7	1	0
NV	ELY	41	21	46	12	31	3	0.24	0.16	0.21	***	***	14.07	147	88	74	0	6	2	0
	LAS VEGAS	57	45	61	40	51	2	0.34	0.28	0.34	***	***	6.28	151	76	56	0	0	1	0
	RENO	42	32	56	28	37	1	1.46	1.27	0.75	***	***	10.92	161	90	82	0	4	4	2
	WINNEMUCCA	43	30	58	25	37	5	0.61	0.44	0.31	***	***	9.55	124	89	80	0	4	5	0
NH	CONCORD	33	16	41	2	25	-6	0.82	0.10	0.35	***	***	39.64	112	90	57	0	7	4	0
NJ	NEWARK	41	31	50	27	36	-5	1.02	0.17	0.69	***	***	54.09	124	78	58	0	6	3	1
NM	ALBUQUERQUE	52	31	58	24	41	2	0.01	-0.07	0.01	***	***	8.94	99	78	47	0	5	1	0
NY	ALBANY	33	20	38	8	27	-6	2.21	1.55	1.35	***	***	44.60	124	82	61	0	7	5	2
	BINGHAMTON	30	21	35	15	25	-7	1.38	0.61	0.65	***	***	42.96	118	87	77	0	7	5	2
	BUFFALO	35	27	39	22	31	-3	2.51	1.58	1.06	***	***	44.79	119	88	70	0	7	6	2
	ROCHESTER	33	22	34	12	27	-7	1.29	0.63	0.74	***	***	32.14	101	84	72	0	7	6	1
	SYRACUSE	33	22	37	15	28	-5	1.54	0.70	0.75	***	***	45.10	119	87	65	0	7	6	1
NC	ASHEVILLE	54	33	66	31	44	2	0.57	-0.23	0.57	***	***	53.54	120	76	43	0	5	1	1
	CHARLOTTE	58	34	68	30	46	-2	0.60	-0.08	0.59	***	***	49.31	120	80	37	0	3	2	1
	GREENSBORO	53	34	57	30	44	0	0.74	0.06	0.74	***	***	48.78	120	77	45	0	4	1	1
	HATTERAS	66	46	89	36	56	3	0.47	-0.34	0.46	***	***	56.23	104	82	46	0	0	2	0
	RALEIGH	56	35	66	30	45	-1	0.47	-0.18	0.47	***	***	40.61	100	79	50	0	2	1	0
	WILMINGTON	62	39	70	31	50	-2	0.55	-0.28	0.43	***	***	43.22	80	89	44	0	1	2	0
ND	BISMARCK	34	17	41	11	26	6	0.00	-0.10	0.00	***	***	30.20	183	91	80	0	7	0	0
	DICKINSON	38	20	44	11	29	7	0.00	-0.08	0.00	***	***	25.37	158	87	66	0	7	0	0
	FARGO	29	11	35	0	20	2	0.00	-0.11	0.00	***	***	33.00	159	93	77	0	7	0	0
	GRAND FORKS	29	7	35	-5	18	1	0.01	-0.11	0.01	***	***	31.04	162	92	73	0	7	1	0
	JAMESTOWN	32	14	38	4	23	4	0.00	-0.08	0.00	***	***	30.06	166	97	76	0	7	0	0
	WILLISTON	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	0	0	0	0
OH	AKRON-CANTON	41	30	56	22	36	1	0.97	0.23	0.83	***	***	44.78	124	85	73	0	4	5	1
	CINCINNATI	47	31	59	27	39	0	0.35	-0.42	0.22	***	***	51.99	130	83	60	0	4	3	0
	CLEVELAND	42	33	57	31	38	2	0.89	0.08	0.36	***	***	40.03	110	84	67	0	2	3	0
	COLUMBUS	44	29	56	20	37	-1	0.18	-0.57	0.11	***	***	42.43	117	83	60	0	6	2	0
	DAYTON	44	29	53	20	37	1	0.30	-0.45	0.28	***	***	41.16	110	85	59	0	5	2	0
	MANSFIELD	42	29	55	20	36	2	0.38	-0.47	0.30	***	***	47.23	116	90	65	0	6	3	0

Based on 1971-2000 normals

***** Not Available**

Weather Data for the Week Ending December 7, 2019

STATES AND STATIONS		TEMPERATURE ˚F						PRECIPITATION							RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS TEMP. ˚F		NUMBER OF DAYS PRECIP	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE DEC 1	PCT. NORMAL SINCE DEC 1	TOTAL, IN., SINCE JAN01	PCT. NORMAL SINCE JAN01	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	TOLEDO	41	30	48	20	36	2	0.48	-0.18	0.46	***	***	43.06	138	77	65	0	5	2	0
	YOUNGSTOWN	39	30	49	23	34	-1	1.03	0.27	0.79	***	***	52.79	147	84	72	0	6	5	1
OK	OKLAHOMA CITY	57	32	68	27	45	2	0.00	-0.42	0.00	***	***	44.70	130	74	40	0	4	0	0
	TULSA	58	34	71	26	46	3	0.00	-0.69	0.00	***	***	58.71	144	71	45	0	4	0	0
OR	ASTORIA	50	38	54	31	44	0	0.92	-1.64	0.43	***	***	41.93	71	95	83	0	1	3	0
	BURNS	38	30	44	24	34	7	0.48	0.20	0.35	***	***	13.85	145	87	80	0	6	2	0
	EUGENE	45	32	49	26	39	-2	0.53	-1.56	0.27	***	***	31.51	70	94	90	0	3	3	0
	MEDFORD	53	34	62	30	44	4	0.16	-0.57	0.13	***	***	17.64	109	92	68	0	3	2	0
	PENDLETON	41	24	52	18	33	-3	0.05	-0.31	0.04	***	***	11.63	100	90	81	0	7	2	0
	PORTLAND	48	36	53	30	42	0	0.83	-0.57	0.58	***	***	23.13	71	85	74	0	2	4	1
	SALEM	47	32	50	27	39	-3	0.85	-0.76	0.58	***	***	26.79	76	97	91	0	4	3	1
PA	ALLENTOWN	41	31	50	22	36	0	0.64	-0.17	0.51	***	***	58.05	136	75	54	0	4	3	1
	ERIE	40	33	45	27	36	-1	1.15	0.21	0.82	***	***	40.94	102	77	66	0	2	6	1
	MIDDLETOWN	43	31	48	23	37	-1	0.71	-0.12	0.40	***	***	45.52	120	85	50	0	3	4	0
	PHILADELPHIA	43	33	51	29	38	-4	0.78	0.03	0.66	***	***	45.86	116	73	52	0	2	4	1
	PITTSBURGH	40	30	50	22	35	-2	0.64	-0.07	0.57	***	***	51.49	144	89	66	0	6	3	1
	WILKES-BARRE	36	28	43	20	32	-4	0.57	-0.10	0.27	***	***	48.15	135	81	61	0	6	4	0
	WILLIAMSPORT	38	29	44	21	33	-2	0.83	0.04	0.64	***	***	47.60	121	80	59	0	7	5	1
RI	PROVIDENCE	39	26	46	20	32	-6	1.21	0.25	0.76	***	***	45.08	104	81	65	0	7	3	1
SC	CHARLESTON	64	41	72	33	53	-1	0.18	-0.45	0.09	***	***	40.85	84	87	41	0	0	2	0
	COLUMBIA	62	37	71	31	50	0	0.28	-0.35	0.28	***	***	33.47	74	73	39	0	2	1	0
	FLORENCE	62	38	67	33	50	-1	0.33	-0.29	0.32	***	***	39.04	93	84	38	0	0	2	0
	GREENVILLE	59	36	65	31	47	0	0.67	-0.16	0.66	***	***	45.57	97	74	38	0	1	2	1
SD	ABERDEEN	33	11	40	-1	22	1	0.00	-0.06	0.00	***	***	31.19	157	88	76	0	7	0	0
	HURON	35	17	42	7	26	3	0.00	-0.09	0.00	***	***	40.52	197	94	74	0	7	0	0
	RAPID CITY	43	23	49	18	33	6	0.00	-0.06	0.00	***	***	36.12	222	82	54	0	7	0	0
	SIOUX FALLS	36	18	42	7	27	4	0.00	-0.17	0.00	***	***	37.37	154	82	71	0	7	0	0
TN	BRISTOL	50	30	60	23	40	-1	0.43	-0.36	0.42	***	***	53.83	139	88	48	0	5	2	0
	CHATTANOOGA	58	37	64	30	48	2	0.36	-0.80	0.36	***	***	58.63	115	86	61	0	1	1	0
	KNOXVILLE	53	36	62	32	45	1	0.65	-0.37	0.65	***	***	60.09	134	81	46	0	1	1	1
	MEMPHIS	55	37	63	30	46	-1	0.41	-1.07	0.41	***	***	70.04	139	82	51	0	2	1	0
	NASHVILLE	56	39	65	33	48	4	0.05	-1.06	0.03	***	***	59.87	134	74	42	0	0	2	0
TX	ABILENE	67	37	83	28	52	4	0.00	-0.23	0.00	***	***	22.18	98	69	32	0	2	0	0
	AMARILLO	60	30	69	23	45	6	0.00	-0.08	0.00	***	***	24.89	130	76	34	0	3	0	0
	AUSTIN	71	40	75	30	56	1	0.00	-0.52	0.00	***	***	28.43	90	61	33	0	1	0	0
	BEAUMONT	72	46	81	37	59	2	0.00	-1.13	0.00	***	***	85.41	153	86	47	0	0	0	0
	BROWNSVILLE	78	57	83	48	67	4	0.02	-0.27	0.02	***	***	21.73	81	87	64	0	0	1	0
	CORPUS CHRISTI	77	52	83	41	64	3	0.00	-0.35	0.00	***	***	22.88	74	82	46	0	0	0	0
	DEL RIO	74	43	78	35	59	4	0.00	-0.17	0.00	***	***	15.02	85	61	30	0	0	0	0
	EL PASO	64	41	69	34	52	5	0.00	-0.15	0.00	***	***	7.30	83	68	34	0	0	0	0
	FORT WORTH	65	42	73	38	53	3	0.00	-0.52	0.00	***	***	33.35	102	64	35	0	0	0	0
	GALVESTON	71	56	79	50	64	3	0.02	-0.81	0.02	***	***	59.27	144	86	43	0	0	1	0
	HOUSTON	72	47	77	38	60	4	0.00	-0.86	0.00	***	***	51.10	114	81	40	0	0	0	0
	LUBBOCK	62	33	72	25	48	6	0.00	-0.14	0.00	***	***	23.76	131	77	38	0	2	0	0
	MIDLAND	68	37	78	30	52	5	0.00	-0.13	0.00	***	***	13.80	97	65	31	0	2	0	0
	SAN ANGELO	72	35	84	27	54	5	0.00	-0.19	0.00	***	***	16.46	82	75	32	0	2	0	0
	SAN ANTONIO	71	45	76	36	58	3	0.00	-0.44	0.00	***	***	21.53	69	77	36	0	0	0	0
	VICTORIA	75	44	82	36	60	2	0.00	-0.55	0.00	***	***	24.71	65	89	43	0	0	0	0
	WACO	68	38	75	32	53	2	0.00	-0.62	0.00	***	***	32.31	104	77	41	0	1	0	0
	WICHITA FALLS	62	36	76	29	49	3	0.00	-0.35	0.00	***	***	27.18	99	80	44	0	2	0	0
UT	SALT LAKE CITY	38	28	48	22	33	0	0.26	-0.02	0.19	***	***	18.74	120	93	79	0	5	2	0
VT	BURLINGTON	31	18	35	9	25	-5	0.26	-0.33	0.10	***	***	41.96	122	83	61	0	7	3	0
VA	LYNCHBURG	51	32	57	26	42	0	0.62	-0.10	0.61	***	***	37.88	93	73	49	0	3	2	1
	NORFOLK	55	39	65	31	47	-1	0.45	-0.17	0.33	***	***	44.71	103	75	52	0	1	2	0
	RICHMOND	52	33	57	26	43	-1	0.70	0.05	0.55	***	***	41.64	101	84	49	0	4	2	1
	ROANOKE	49	35	54	31	42	0	1.06	0.37	1.06	***	***	41.49	103	70	51	0	2	1	1
	WASH/DULLES	46	32	50	24	39	-1	0.46	-0.25	0.39	***	***	38.31	97	78	57	0	4	4	0
WA	OLYMPIA	48	38	50	28	43	4	0.50	-1.45	0.44	***	***	28.15	63	95	91	0	2	4	0
	QUILLAYUTE	48	41	51	29	45	3	1.56	-1.94	0.72	***	***	67.81	75	97	90	0	1	6	1
	SEATTLE-TACOMA	51	43	56	37	47	5	0.34	-1.07	0.29	***	***	26.28	80	82	69	0	0	3	0
	SPOKANE	40	30	46	18	35	6	0.34	-0.22	0.31	***	***	13.66	91	90	72	0	4	3	0
	YAKIMA	36	26	43	15	31	0	0.18	-0.11	0.10	***	***	8.05	112	90	85	0	5	2	0
WV	BECKLEY	42	29	55	27	36	-3	0.71	0.02	0.39	***	***	45.57	116	84	62	0	5	4	0
	CHARLESTON	47	32	62	27	40	-1	0.85	0.01	0.41	***	***	44.30	107	87	56	0	3	4	0
	ELKINS	43	27	56	21	35	-1	0.95	0.14	0.42	***	***	47.78	110	80	69	0	6	5	0
	HUNTINGTON	47	32	62	27	39	-2	0.52	-0.25	0.37	***	***	46.31	117	86	54	0	5	3	0
WI	EAU CLAIRE	35	16	39	7	25	2	0.03	-0.28	0.03	***	***	43.73	139	87	65	0	7	1	0
	GREEN BAY	34	22	36	13	28	2	0.31	-0.10	0.31	***	***	47.20	167	84	69	0	7	1	0
	LA CROSSE	39	25	43	21	32	5	0.04	-0.33	0.04	***	***	44.19	140	82	59	0	7	1	0
	MADISON	39	25	43	20	32	4	0.04	-0.42	0.04	***	***	47.23	149	85	66	0	7	1	0
	MILWAUKEE	40	28	44	24	34	3	0.18	-0.40	0.18	***	***	44.74	135	80	63	0	6	1	0
WY	CASPER	37	23	42	9	30	4	0.00	-0.14	0.00	***	***	19.81	158	76	65	0	6	0	0
	CHEYENNE	45	26	50	18	36	7	0.01	-0.10	0.01	***	***	28.38	188	64	44	0	6	1	0
	LANDER	30	7	45	-3	19	-5	0.00	-0.16	0.00	***	***	20.56	159	94	60	0	7	0	0
	SHERIDAN	45	18	54	2	32	7	0.00	-0.14	0.00	***	***	21.02	148	80	63	0	7	0	0

Based on 1971-2000 normals

***** Not Available**

November Weather and Crop Summary

Weather

Weather summary provided by USDA/WAOB

Highlights: Late-month storms delivered drought-easing precipitation to the Southwest, while early-season snowpack languished in the Northwest amid an extended spell of mild, mostly dry weather. Snowpack was greater than 400 percent of the early-December average in much of Arizona, but less than 50 percent of average in many river basins across Oregon, Washington, and northern Idaho.

The Southwestern storminess, which peaked from November 19-21 and 26-29, later reached other parts of the country. As a result, late-November snowfall curtailed fieldwork, including corn, soybean, and sunflower harvest efforts, across the northern Plains and upper Midwest. The nation's corn harvest was 89 percent complete by December 1—the least progress on that date since 2009, when 82 percent had been harvested.

Prior to the late-month fieldwork stoppage across large sections of the northern Plains and Midwest, there had been some harvest opportunities. Ironically, one of the best periods for fieldwork occurred around mid-month, when a sharp but short-lived cold snap caused upper Midwestern soils to freeze. Still, the nation's sunflower harvest was just 65 percent complete by December 1, easily the least progress on that date in the last two decades.

Meanwhile, periodic showers generally eased Southeastern drought but caused only minor fieldwork delays, allowing harvesting for crops such as cotton and peanuts to near completion. However, showers mostly bypassed southern Florida, where short-term dryness intensified during November.

Farther west, patchy drought and periodic cold outbreaks across the southern half of the Plains led to some stress on rangeland, pastures, and winter wheat. By November 24, Texas led the nation (among major production states) with 28 percent of its wheat rated in very poor to poor condition, twice the national value of 14 percent. In early December, 45 percent of Texas' rangeland and pastures were rated very poor to poor.

Historical Perspective: According to preliminary data provided by the National Centers for Environmental Information, the contiguous U.S. experienced its 48th-coolest, 32nd-driest November during the 1895-2019 period of record. The nation's average temperature of 41.2°F was 0.5°F below the 20th century mean, while precipitation averaged 1.86 inches—83 percent of normal. It was the country's third-coldest November in the last 19 years—only 2014 and 2018 were colder.

State temperature rankings ranged from the ninth-coldest November in Vermont to the tenth-warmest in California (figure 1). It was the tenth-coldest November in Mississippi, with several other states in the Mississippi Valley and Great Lakes region ranking just outside the top ten. Meanwhile, state precipitation rankings ranged from the fifth-driest November in Idaho and Washington to the third-wettest November in Arizona (figure 2). A top-ten ranking for November dryness also occurred in Oregon, while New Mexico observed its fifth-wettest November during the 125-year period of record.

Figure 1 Statewide Average Temperature Ranks
November 2019
Period: 1895–2019

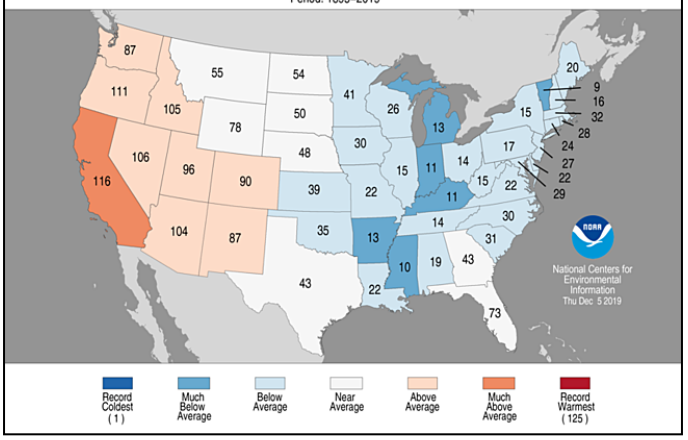
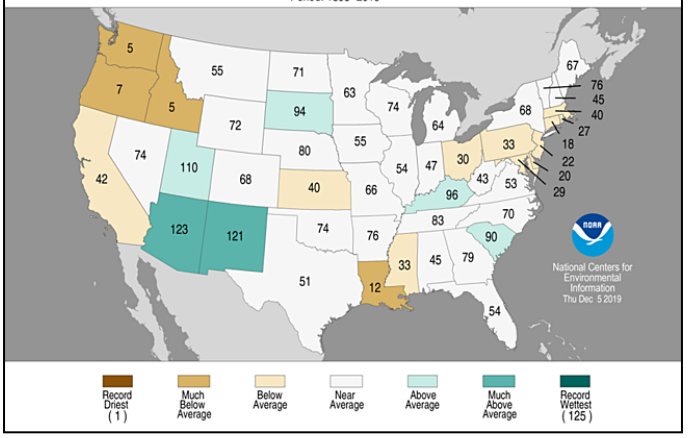


Figure 2 Statewide Precipitation Ranks
November 2019
Period: 1895–2019



Summary: As November began, a strong cold front crossing the Atlantic Seaboard set the stage for a cold month across the eastern half of the country. Very early on November 1, wind gusts reached 70 mph at the Blue Hill Observatory in Milton, MA, and 62 in Niagara Falls, NY. Before colder air arrived, Caribou, ME, tied a monthly record with a high of 68°F on November 1. A few days later, warmth briefly returned across the Deep South. In Texas, San Angelo posted a daily-record high of 91°F on November 4. On the 5th, Fort Myers, FL, also notched a high of 91°F, setting a record for the date. In fact, Fort Myers attained a high of 91°F each day from November 5-8. Meanwhile, expansive warmth developed across the Far West, where Ukiah, CA, registered consecutive daily-record highs (85°F both days) on November 5-6. By November 8, Western daily-record highs included 83°F in Red Bluff, CA;

72°F in Winnemucca, NV; and 67°F in Eugene, OR. In contrast, a new surge of cold air skirted the North before settling into the East. In Montana, record-setting lows for November 6 included -11°F in Simpson and -9°F in Cut Bank. Simpson also registered a record on the 7th, with a low of -12°F. On November 8, Rochester, MN, noted a low of 0°F—a record for the date and the fourth-earliest observance in that location of a low of 0°F or below. In Michigan, daily-record lows for November 8 plunged to 2°F in Gaylord and 5°F in Pellston. On November 8-9, consecutive daily-record lows occurred in locations such as Mount Pocono, PA (16 and 11°F, respectively), and Trenton, NJ (26 and 19°F, respectively). Other record-setting lows for November 9 included 15°F in Worcester, MA, and 17°F in Bangor, ME. Farther west, however, a brief surge of warmth in advance of another strong cold front led to daily-record highs for November 9 in McCook, NE (82°F); Concordia, KS (78°F); and Denver, CO (77°F).

The early-month chill across the North was accompanied by occasional snow. Record-setting snowfall totals for November 6 reached 6.2 inches in Muskegon, MI; 4.5 inches in La Crosse, WI; and 4.1 inches in Rochester, MN. Meanwhile, rain developed across the south-central U.S. In Texas, daily-record totals for November 7 included 1.76 inches in Abilene and 0.71 inch in San Angelo. On November 6-7, Midland, TX, received exactly an inch of rain. Two-day (November 6-7) rainfall totals topped 2 inches in locations such as Harrison, AR (3.46 inches); Tulsa, OK (2.75 inches); and West Plains, MO (2.14 inches). In contrast, a record-setting streak without measurable precipitation in Saint George, UT, eventually reached 155 days (June 18 – November 19) before abruptly ending with a 1.29-inch deluge in a 24-hour period on November 19-20.

The mid-month highlight east of the Rockies was a cold blast, preceded and accompanied by rain and snow. Havre, MT, posted consecutive daily-record lows (-18 and -19°F, respectively) on November 10-11. Similarly, November 11-12 featured consecutive daily-record lows in communities such as Cedar Rapids, IA (4 and -6°F); Garden City, KS (2 and -1°F); Pellston, MI (5 and 4°F); Lincoln, IL (13 and 4°F); and Joplin, MO (16 and 11°F). Sub-zero, daily-record lows were set on November 12 in many other locations, including Hibbing, MN (-13°F); Broken Bow, NE (-10°F); Gaylord, MI (-4°F); and Dubuque, IA (-5°F). As the frigid air swept southeastward, consecutive daily-record lows were established on November 12-13 in dozens of locations, including Cincinnati, OH (12 and 10°F); Evansville, IN (13 and 9°F); Paducah, KY (12 and 10°F); Indianapolis, IN (8 and 9°F); and Flint, MI (6 and 1°F). With the low of 8°F on the 12th, Indianapolis experienced its earliest-ever reading below the 10-degree mark (previously, 4°F on November 17, 1959). The following day, on November 13, Burlington, VT (9°F), also noted its earliest reading below 10°F (previously, 9°F on November 15, 1933). On November 14, a lingering chill in Maine resulted in daily-record lows in Houlton (-3°F) and Caribou (3°F). Farther south, November 13 temperatures plunged below 20°F in locations such as Longview, TX (19°F); Birmingham, AL (18°F); and Greenwood, MS (16°F). In southern Louisiana, daily-record lows on the 13th dipped to 24°F in Baton Rouge and 25°F in Lafayette. At the height of the cold spell, there was little warming during the day. On November 12 in Wisconsin, Milwaukee's high temperature of 19°F represented its earliest sub-20°F maximum (previously set on November 14, 1916). In the Deep South, high temperatures on November 12 barely climbed above the freezing mark in Tupelo, MS (34°F), and Muscle Shoals, AL (35°F). In contrast, several daily-record highs were set in the Far West.

Snow fell in advance of the cold wave. Havre, MT, received 7.7 inches of snow on November 9-10, aided by a daily-record sum (4.7 inches) on the latter date. On the 11th, Detroit, MI, experienced its snowiest November day on record. Detroit's 8.5-inch total eclipsed the former mark of 6.2 inches, set on November 15, 1925. Elsewhere, record-setting snowfall totals for November 11 included 8.7 inches in Buffalo, NY; 8.6 inches in Flint, MI; 6.0 inches in South Bend, IN; 4.7 inches in Springfield, IL; 3.4 inches in Milwaukee, WI; and 2.9 inches in Des Moines, IA. In New York, Rochester received 16.7 inches of snow from November 11-13. In northern Maine, Caribou netted a daily-record snowfall (6.8 inches) on November 12. Also on the 12th, Southern snowfall totaled 1.7 inches in Knoxville, TN, and 1.2 inches in Jackson, KY. Meanwhile, rain spread from southern Texas into the Southeast. From November 11-14, rainfall in Harlingen, TX, totaled 2.69 inches. Similarly, rainfall in Fort Lauderdale, FL, reached 4.58 inches from November 13-15. Jacksonville, FL, collected a record-setting rainfall total (3.16 inches) for November 15. In Georgia, daily-record amounts included 4.04 inches (on November 16) in Savannah and 2.32 inches (on November 15) on Saint Simons Island. Savannah received 5.35 inches from November 14-16. Farther north, peak wind gusts on November 16 were clocked to 53 mph in Beaufort, NC, and 46 mph in North Myrtle Beach, SC.

Subsequently, the Southwest's most significant storm since spring 2019 delivered drought-easing precipitation in the southern Great Basin and parts of the Four Corners States. Heavy precipitation also fell in southern California. In southwestern Utah, Bryce Canyon Airport netted 1.85 inches in a 48-hour period from November 19-21. In northern Arizona, Flagstaff received 2.37 inches (6.6 inches of snow) on November 20-21. The 20th was a particularly wet day in several desert locations, including Kingman, AZ (0.83 inch), and Las Vegas, NV (0.67 inch). From November 19-21, totals in southern California reached 2.67 inches in Campo and 2.14 inches in Ramona. Meanwhile, heavy snow briefly affected northern New England, where Caribou, ME, reported a daily-record total (5.5 inches) for November 19. The National Weather Service office in Grand Forks, ND, achieved its wettest year on record when precipitation totaled 0.34 inch (1.0 inch of snow) on November 20. Prior to this year, Grand Forks' wettest year had been 2016, when 31.27 inches fell. Through November, Grand Forks' year-to-date total of 32.18 inches was 153 percent of normal. Elsewhere, light snow fell across parts of the High Plains, while rain developed in the Southeast. On November 21-22, snowfall

totaled 0.5 inch in Dalhart, TX. Later, record-setting rainfall totals for November 23 included 2.64 inches in Knoxville, TN; 1.13 inches in Jackson, KY; and 1.05 inches in Greensboro, NC. As the storm system departed the Northeast on November 24, daily precipitation records were set in Hartford, CT (1.27 inches), and Augusta, ME (1.06 inches).

In advance of the Southwestern storminess, warmth dominated the Far West. In California, record-setting highs for November 17 soared to 94°F in Camarillo and Escondido. Daily-record highs for the 17th also topped the 90-degree mark in California locations such as Thermal (93°F), Long Beach (93°F), and Palm Springs (92°F). The warmth extended into the Desert Southwest, where Yuma, AZ, posted a daily-record high of 89°F on November 17. Daily-record highs consecutively topped the 90-degree mark on November 17-18 at several California sites, including Anaheim (94 and 96°F), Santa Ana (94°F both days), and Los Angeles International Airport (93°F both days). In contrast, frigid weather lingered in the Northeast, where daily-record lows for the 17th plunged to -1°F in Saint Johnsbury, VT, and Caribou, ME. For Caribou, it was the earliest sub-zero reading on record (previously, -1°F on November 21, 1959). Later, warm weather replaced previously cool conditions across the Deep South, where daily-record highs included 84°F (on November 20) in Austin, TX, and 81°F (on November 21) in Vicksburg, MS.

In late November, a pair of Thanksgiving Week storms snarled holiday travel and resulted in a variety of weather hazards, including snow, rain, and high winds. On November 26, an intensifying storm system crossed the nation's mid-section. In Nebraska, record-setting snowfall totals for November 26 included 8.2 inches in Grand Island, 7.1 inches in Hastings, and 6.5 inches in Norfolk. Peak wind gusts on the 26th in those locations reached 46, 48, and 47 mph, respectively. Rochester, MN, received 6.8 inches of snow on November 26-27, accompanied by a northerly wind gust to 50 mph on the latter date. In Michigan, Marquette reported its wettest November day on the 27th, with a 3.02-inch total (previously, 2.18 inches on November 6, 1988). Marquette also received 16.4 inches of snow on the 27th. Elsewhere in the Great Lakes region, November 27 featured daily-record precipitation totals in Alpena, MI (1.79 inches), and Rhinelander, WI (1.15 inches). Farther south, peak wind gusts on the 27th were clocked to 63 mph in St. Louis, MO, and 56 mph in Dayton, OH.

Meanwhile, a new storm arrived in the West. Along the Oregon coast, a wind gust to 106 mph was recorded on the 26th on Cape Blanco. Elsewhere on November 26, gusts reached 66 mph in Montague, CA, and 64 mph in Amarillo, TX. In northern California, Mt. Shasta City collected a daily-record total of 1.63 inches on November 26. In southern California, Camarillo received 1.91 inches on November 27-28. Record-setting totals topped an inch in southern California locations such as Long Beach (2.18 inches on November 28), Riverside (1.44 inches on November 28), and Santa Barbara (1.08 inches on November 27). Elsewhere in California, the wettest November on record occurred in Needles (2.69 inches; previously, 2.20 inches in 1905), while the snowiest November was reported in Bishop (6.8 inches; previously, 3.9 inches in 1964). All of Bishop's snow fell on November 27-28. It was also the wettest November on record in Douglas, AZ (4.62 inches; previously, 3.35 inches in 1994), aided by a 2.19-inch deluge on the 27th. The only wetter November day on record in Douglas occurred on November 11, 1994, when 2.35 inches fell. Flagstaff, AZ, reported precipitation totaling 2.95 inches (and 16.8 inches of snow) from November 28-30. High winds again swept eastward, with Trinidad, CO, reporting a gust to 75 mph on November 29. Elsewhere, late-November snow blanketed the North, while heavy showers swept across the South and lower Midwest. Record-setting rainfall totals for November 30 reached 3.98 inches in Muscle Shoals, AL; 3.01 inches in Louisville, KY; and 2.91 inches in Evansville, IN. In South Dakota, daily-record snowfall totals for November 30 included 14.5 inches in East Rapid City and 14.3 inches in Aberdeen. East Rapid City also clocked a peak wind gust to 59 mph. In Duluth, MN, precipitation on November 30 and December 1 totaled 1.40 inches, in the form of 21.7 inches of snow.

Warmth in advance of the late-month storminess resulted in several daily-record highs. In Texas, record-setting highs for November 25 soared to 88°F in Austin (Camp Mabry) and 85°F in Waco. On November 27, daily-record highs in Florida reached 84°F in Pensacola and 80°F in Apalachicola. Elsewhere in Florida, Sarasota-Bradenton posted a daily record-tying high of 86°F on November 29. A surge of Southern warmth on November 30 produced daily-record highs in Texas locations such as Laredo (95°F), McAllen (92°F), and Corpus Christi (91°F). Elsewhere on the 30th, daily-record highs climbed to 83°F in Lafayette, LA, and 80°F in Montgomery, AL. In contrast, chilly air settled across the West, where record-setting lows for November 29 included 24°F in Astoria, OR, and 25°F in Santa Rosa, CA. The Western chill deepened on November 30, when lows plunged to daily-record levels in Klamath Falls, OR (0°F), and Bishop, CA (8°F).

Mild, wet conditions dominated Alaska, although there were brief periods of cold, dry weather. McGrath experienced its wettest November on record, with precipitation totaling 4.55 inches (323 percent of normal). Previously, McGrath's wettest November had occurred in 1979, when 4.34 inches fell. Monthly precipitation was nearly three times normal in Bettles (2.61 inches, or 287 percent of normal) and Fairbanks (1.83 inches, or 273), and approximately twice normal in locations such as King Salmon (2.88 inches, or 207 percent) and Bethel (3.17 inches, or 198 percent). Despite a late-month drying trend in southeastern Alaska, November precipitation reached 21.27 inches (128 percent of normal) in Ketchikan; 18.72 inches (130 percent) in Yakutat; 14.62 inches (149 percent) in Sitka; and 9.93 inches (166 percent) in Juneau. Across the Alaskan mainland, snow fell heavily at various times. Fairbanks' heaviest snow of the month occurred on November 6-7, when 8.0 inches fell. Anchorage received an 8.4-inch snowfall on November 16, accounting

for more than three-quarters of its 10.8-inch monthly sum. From November 26-28, an impressive storm struck Bettles, where the precipitation total of 2.28 inches included a 28.4-inch snowfall. Meanwhile, long periods of mild weather boosted monthly temperature at least 5 to 15°F above normal at many interior locations. King Salmon reported a record-setting high each day from November 5-10, with temperatures reaching 53, 51, 53, 52, 51, and 51°F. King Salmon noted additional record-setting highs (50°F both days) on November 19 and 27, while Anchorage logged a daily-record high (49°F) on November 21.

Warm weather prevailed for nearly the entire month in Hawaii, but a dry pattern was broken in many areas by a mid-month storm. Following the storm's departure, regular shower activity returned across most windward locations. Despite the mid- to late-month increase in rainfall, Hilo (on the Big Island) ended the month with a below-average total of 10.28 inches (66 percent of normal). At the state's other major airport observation sites, November rainfall ranged from 0.21 inch (10 percent of normal) in Kahului to 4.98 inches (112 percent) in Lihue, Kauai. Nearly half (2.30 inches) of Lihue's monthly total fell on November 19. Honolulu, Oahu, also experienced a period of heavy rain, with 2.34 inches falling on November 18-19. Earlier, during a spell of unusual heat, Hilo (90°F on the 2nd) attained the 90-degree mark in November for the first time since November 28, 2013, when the high soared to 94°F. Hilo also posted daily-record highs (89, 87, 88, 87, 88, 88, and 89°F) on 7 consecutive days from November 9-15. Finally, Hilo completed its warmest November on record, with a monthly average temperature of 77.5°F (previously, 76.8°F in 2015). With a high of 87°F on the 2nd, Lihue, Kauai, noted its warmest November day since 1997, when the temperature peaked at 87°F on November 17. Meanwhile, Kahului, Maui, achieved 9 days with 90-degree heat, second only to 12 such days in November 1968. However, Kahului's 1968 annual record of 94 days with 90-degree heat was further demolished, with the city reporting 161 such days through November 30, 2019.

Fieldwork

Fieldwork summary provided by USDA/NASS

November was cooler than average for most of the eastern half of the nation, except in central and southern Florida. Temperatures averaged 5°F or more below normal for much of the Great Lakes, Northeast, middle Mississippi Valley, and Ohio Valley. In contrast, much of the nation west of the Rockies was warmer than average, with temperatures averaging 5°F or more above normal in parts of California, Idaho, Oregon, and Utah. During November, much of the Northwest remained mostly dry. In contrast, parts of Arizona received precipitation totaling 6 inches or more. Much of the eastern half of the nation received at least 2 inches, with parts of Arkansas, Kentucky, Missouri, Oklahoma, and Tennessee receiving more than 6 inches.

By November 3, ninety-six percent of this year's corn acreage had reached maturity, 4 percentage points behind both the previous year and the 5-year average. Fifty-two percent of the 2019 acreage was harvested by November 3, twenty-two percentage points behind the previous year and 23 points behind the 5-year average. Overall, 58 percent of the nation's corn acreage was rated in good to excellent condition on November 3, ten percentage points below the same time last year. By November 17, seventy-six percent of the 2019 acreage was harvested, 13 percentage points behind the previous year and 16 points behind the 5-year average. Eighty-nine percent of the acreage was harvested by December 1, eight percentage points behind the previous year and 9 points behind the 5-year average.

Soybean harvest across the nation was 75 percent complete by November 3, six percentage points behind the previous year and 12 points behind the 5-year average. By November 17, soybean harvest across the nation was 91 percent complete, identical to the previous year but 4 percentage points behind the 5-year average. Soybean harvest across the nation was 96 percent complete by December 1, one percentage point behind the previous year and 3 points behind the 5-year average.

By November 3, eighty-nine percent of the nation's intended 2020 winter wheat acreage was sown, 6 percentage points ahead of the previous year and 1 point ahead of the 5-year average. Seventy-one percent of the nation's winter wheat acreage was emerged by November 3, two percentage points ahead of the previous year but 3 points behind the 5-year average. Nationwide, producers had sown 95 percent of the intended 2020 winter wheat acreage by November 17, three percentage points ahead of the previous year but equal to the 5-year average. By November 17, eighty-three percent of the winter wheat acreage had emerged, 3 percentage points ahead of the previous year but 3 points behind the 5-year average. Eighty-seven percent of the nation's winter wheat acreage had emerged by November 24, two percentage points ahead of the previous year but 3 points behind the 5-year average. Overall, 52 percent of the 2020 winter wheat acreage was reported in good to excellent condition by November 24, three percentage points below the same time last year.

Fifty-three percent of the nation's cotton acreage was harvested by November 3, five percentage points ahead of the previous year and 2 points ahead of the 5-year average. By November 17, sixty-eight percent of the nation's cotton acreage was harvested, 10 percentage points ahead of the previous year and 2 points ahead of the 5-year average. Eighty-three percent of the nation's cotton acreage was harvested by December 1, nine percentage points ahead of the previous year and 2 points ahead of the 5-year average.

By November 3, seventy-eight percent of the 2019 sorghum acreage was harvested, 16 percentage points ahead of the previous year and 6 points ahead of the 5-year average. Ninety-three percent of the nation's sorghum acreage was harvested by November 17, fourteen percentage points ahead of the previous year and 6 points ahead of the 5-year

average. By November 24, ninety-seven percent of the nation's sorghum acreage was harvested, 9 percentage points ahead of the previous year and 5 points ahead of the 5-year average.

Eighty-four percent of the nation's peanut acreage was harvested as of November 3, ten percentage points ahead of the previous year and 6 points ahead of the 5-year average. By November 17, ninety-three percent of the nation's peanut acreage was harvested, 8 percentage points ahead of the previous year and 3 points ahead of average. Ninety-six percent of the nation's peanut acreage was harvested as of November 24, six percentage points ahead of the previous year and 2 points ahead of the 5-year average.

By November 3, sugarbeet producers had harvested 70 percent of the nation's acreage, 20 percentage points behind the previous year and 21 points behind the 5-year average. Sugarbeet producers had harvested 96 percent of the nation's acreage by November 10, one percentage point ahead of the previous year but unchanged from the average.

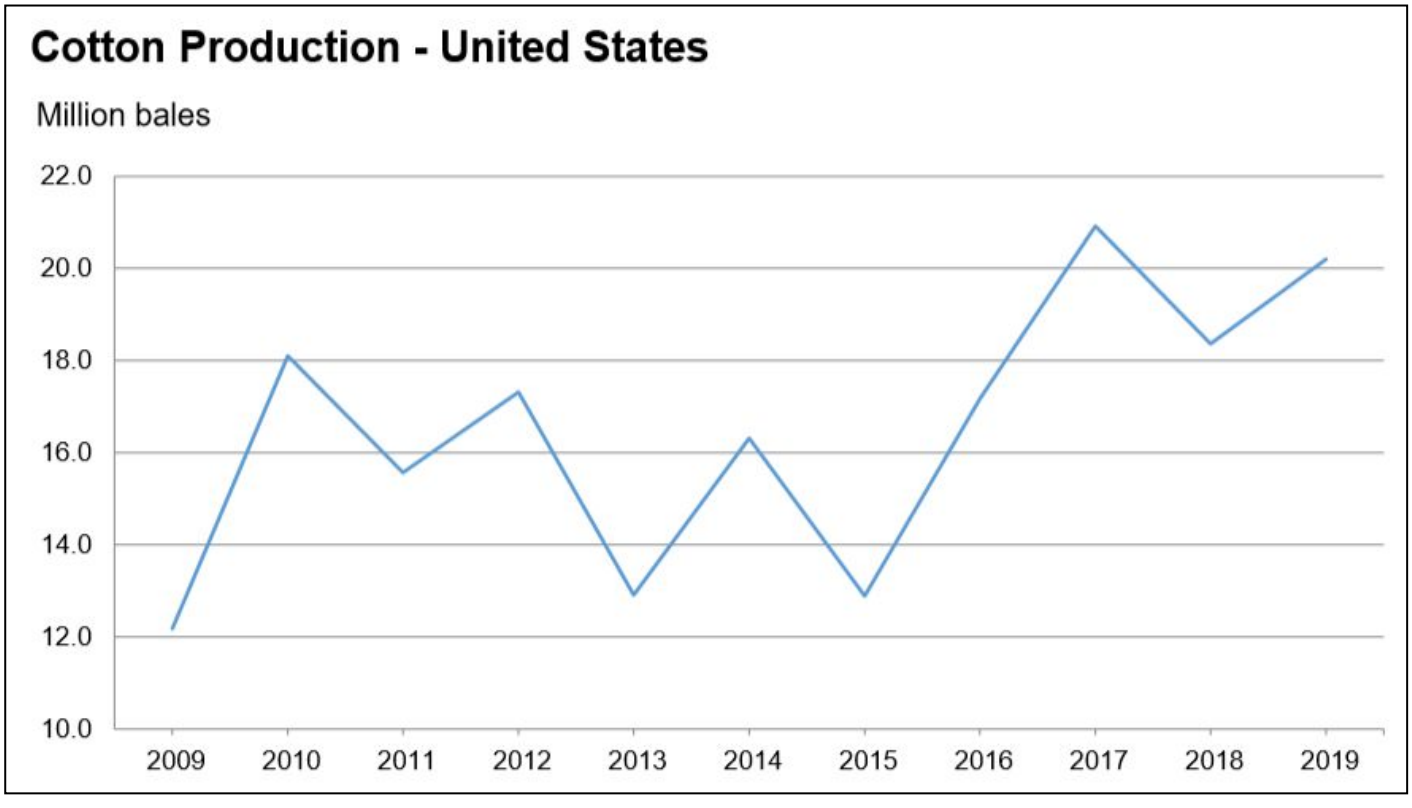
Thirty-one percent of this year's sunflower crop was harvested by November 3, eighteen percentage points behind the previous year and 31 points behind the 5-year average. By November 17, forty-seven percent of this year's sunflower acreage was harvested, 21 percentage points behind the previous year and 36 points behind the 5-year average. Sixty-five percent of this year's sunflower crop was harvested by December 1, sixteen percentage points behind the previous year and 29 points behind the 5-year average.

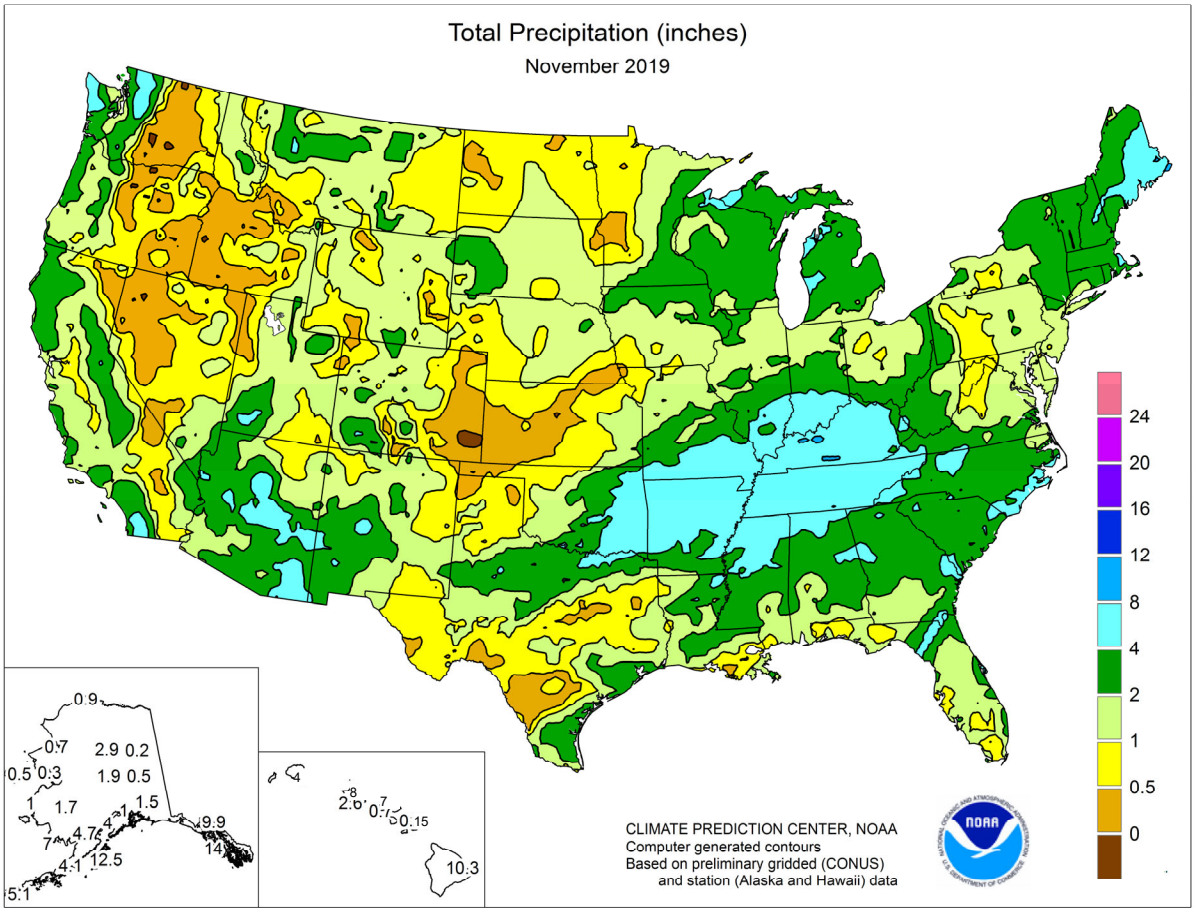
U.S. Crop Production Highlights

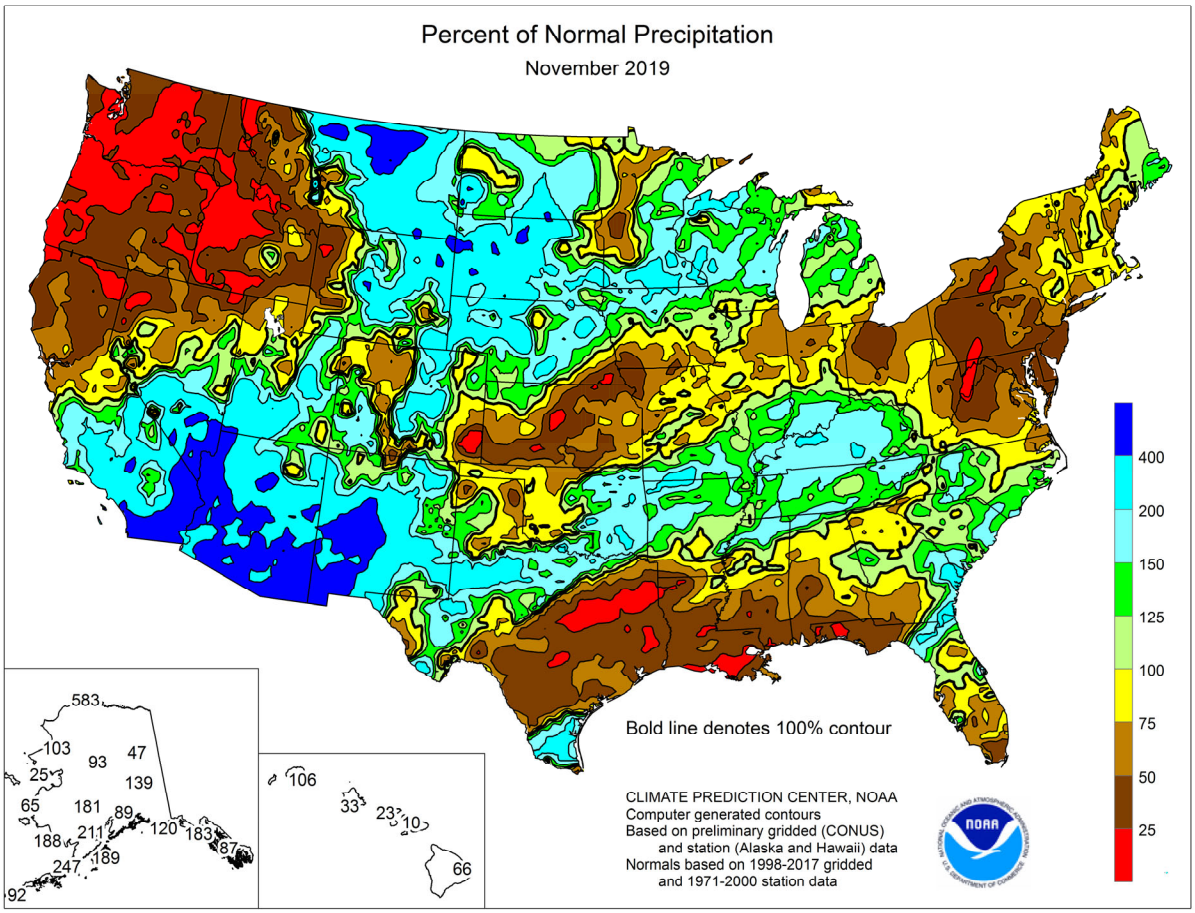
The following information was released by USDA's Agricultural Statistics Board on December 10, 2019. Forecasts refer to December 1.

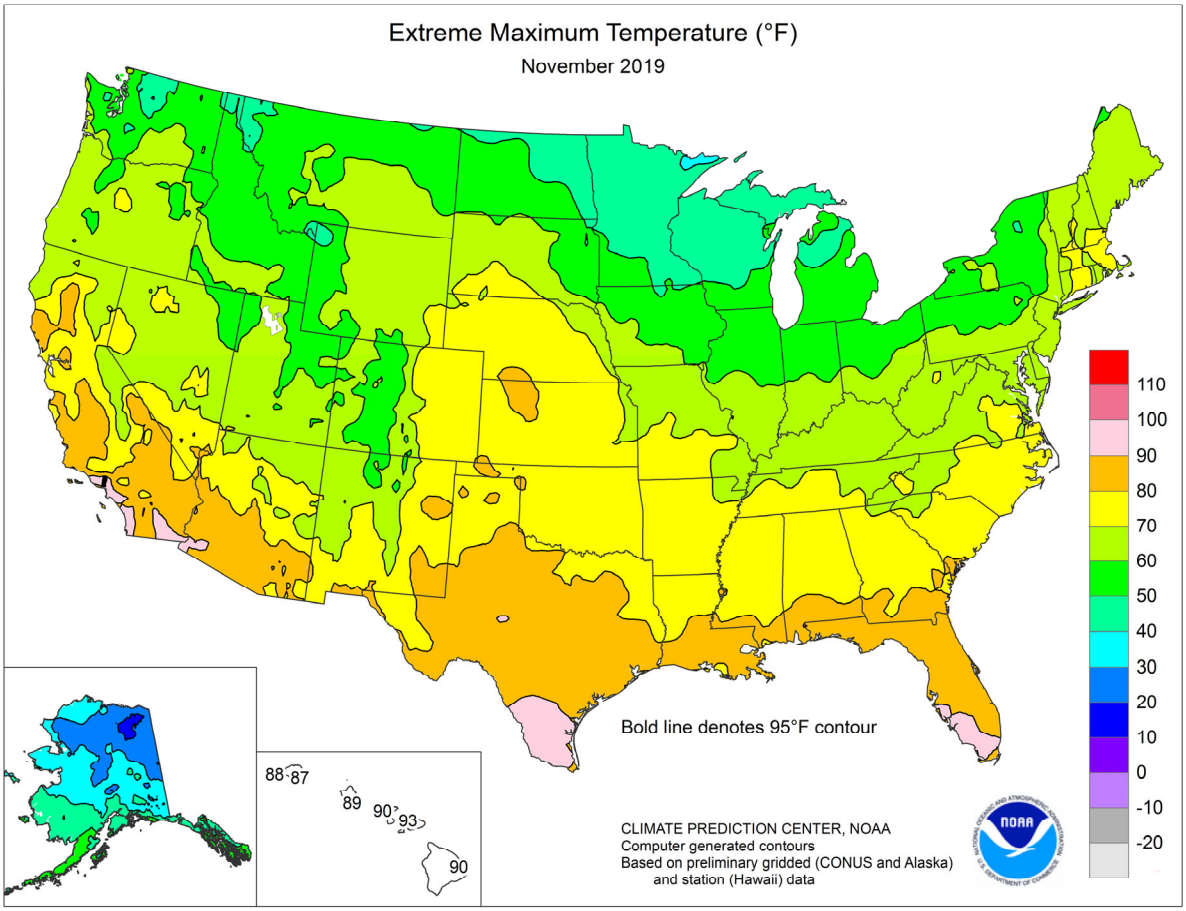
All cotton production is forecast at 20.2 million 480-pound bales, down 3 percent from the previous forecast but up 10 percent from 2018. Yields are expected to average 775 pounds per harvested acre, down 24 pounds from the previous forecast and down 89 pounds from 2018. Upland cotton production is forecast at 19.5 million 480-pound bales, down 3 percent from the previous forecast but up 11 percent from 2018. Pima cotton production is forecast at 726,000 bales, down 3 percent from the previous forecast and down 9 percent from 2018. All cotton area harvested is forecast at 12.5 million acres, unchanged from the previous forecast but up 23 percent from 2018.

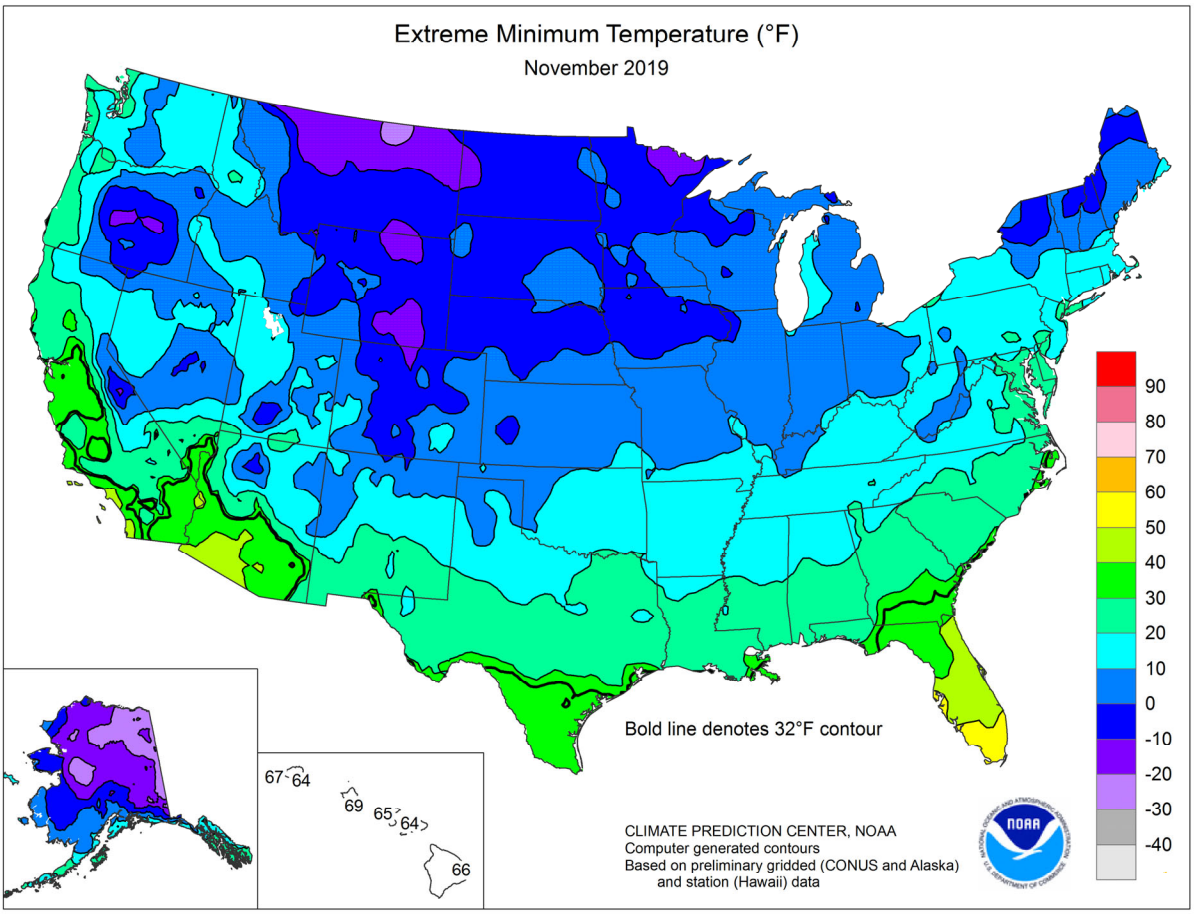
The U.S. **all orange** forecast for the 2019-2020 season is 5.33 million tons, unchanged from the previous forecast and virtually unchanged from the 2018-2019 final utilization. The Florida all orange forecast, at 74.0 million boxes (3.33 million tons), is unchanged from the previous forecast but up 3 percent from last season. Early, midseason, and Navel varieties in Florida are forecast at 32.0 million boxes (1.44 million tons), unchanged from the previous forecast but up 5 percent from last season. The Florida Valencia orange forecast, at 42.0 million boxes (1.89 million tons), is unchanged from the previous forecast but up 2 percent from last season. California and Texas orange production forecasts were carried forward from the previous forecast.

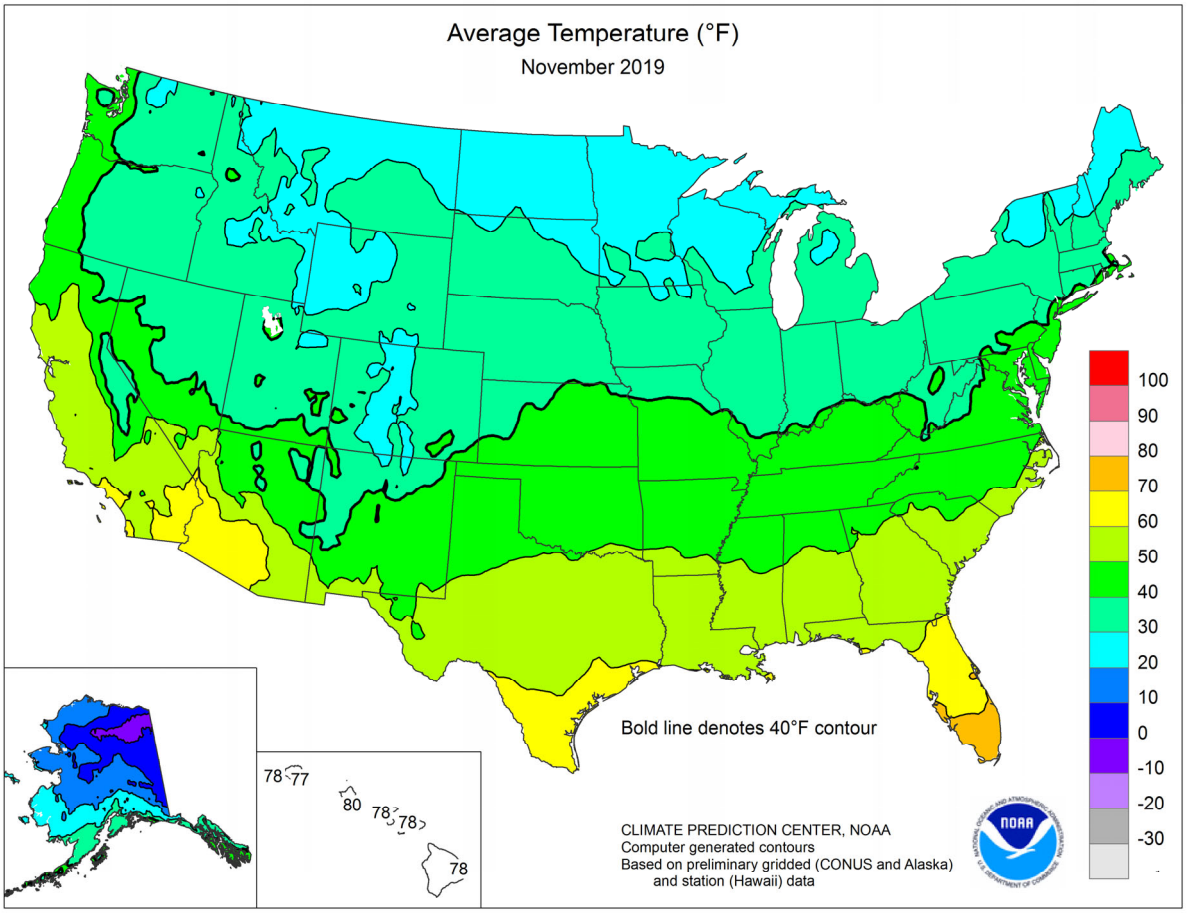


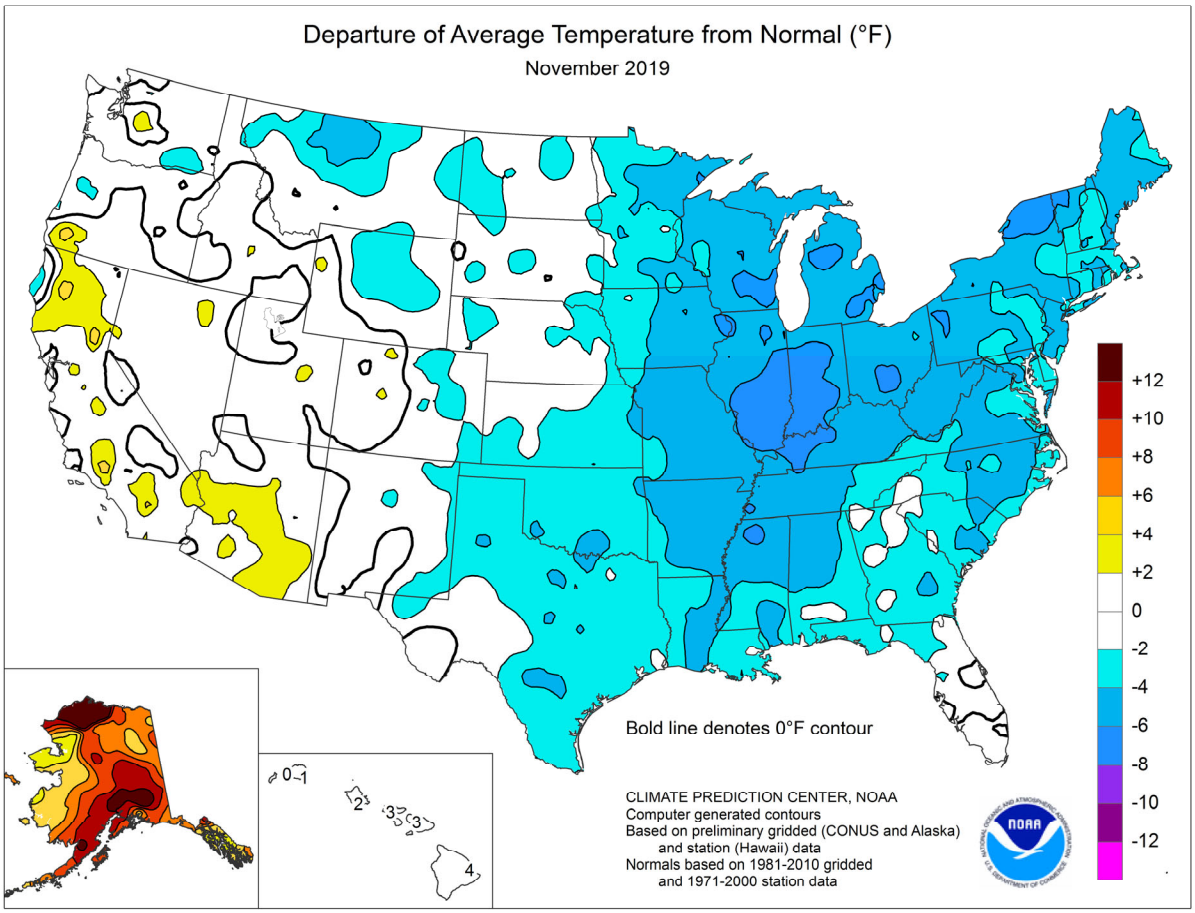

Total Precipitation (inches)
November 2019
24
20
16
12
8
4
2
1
0.5
0
0.9
0.7
2.9 0.2
0.5 0.3
1.9 0.5
1
1.7
1.5
9.9
7
4.7
14
4.1
12.5
5.1
2.6
0.7
0.15
10.3
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS)
and station (Alaska and Hawaii) data
NOAA


Percent of Normal Precipitation
November 2019
400
200
150
125
100
75
50
25
583
103
93
47
25
139
65
181
89
120
183
188
211
87
247
189
92
106
33
23
10
66
Bold line denotes 100% contour
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS)
and station (Alaska and Hawaii) data
Normals based on 1998-2017 gridded
and 1971-2000 station data
NOAA


Extreme Maximum Temperature (°F)
November 2019
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
Bold line denotes 95°F contour
88 87
89
90 93
90
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data


Extreme Minimum Temperature (°F)
November 2019
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
Bold line denotes 32°F contour
67 64
69
65 64
66
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data


Average Temperature (°F)
November 2019
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
78
77
80
78
78
78
Bold line denotes 40°F contour
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data
NOAA


Departure of Average Temperature from Normal (°F)
November 2019
+12
+10
+8
+6
+4
+2
0
-2
-4
-6
-8
-10
-12
0
1
2
3
3
4
Bold line denotes 0°F contour
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data
Normals based on 1981-2010 gridded
and 1971-2000 station data
NOAA

National Weather Data for Selected Cities

November 2019

Data Provided by Climate Prediction Center

STATES AND STATIONS	TEMP, °F		PRECIP.		STATES AND STATIONS	TEMP, °F		PRECIP.		STATES AND STATIONS	TEMP, °F		PRECIP.	
	AVERAGE	DEPARTURE	TOTAL	DEPARTURE		AVERAGE	DEPARTURE	TOTAL	DEPARTURE		AVERAGE	DEPARTURE	TOTAL	DEPARTURE
AL BIRMINGHAM	51	-2	2.54	-2.09	LEXINGTON	42	-4	5.77	2.33	COLUMBUS	39	-5	1.52	-1.67
HUNTSVILLE	48	-3	4.78	-0.44	LONDON-CORBIN	42	-5	5.56	1.66	DAYTON	39	-3	1.63	-1.67
MOBILE	57	-2	1.28	-4.13	LOUISVILLE	43	-5	5.65	1.85	MANSFIELD	37	-3	1.13	-2.63
MONTGOMERY	54	-2	2.15	-2.38	PADUCAH	43	-4	5.57	1.04	TOLEDO	37	-3	1.01	-1.77
AK ANCHORAGE	36	14	2.04	0.95	LA BATON ROUGE	57	-2	1.72	-3.04	YOUNGSTOWN	37	-4	1.84	-1.23
BARROW	17	18	0.94	0.78	LAKE CHARLES	60	0	1.66	-2.95	OK OKLAHOMA CITY	47	-2	1.05	-1.06
COLD BAY	42	7	6.51	1.72	NEW ORLEANS	61	0	0.32	-4.77	TULSA	48	-2	4.83	1.36
FAIRBANKS	14	12	0.05	-0.63	SHREVEPORT	54	-2	0.86	-3.82	OR ASTORIA	46	-1	2.20	-8.30
JUNEAU	38	5	9.94	4.51	ME BANGOR	33	-4	3.43	-0.26	BURNS	34	1	0.46	-0.65
KING SALMON	36	13	2.91	1.37	CARIBOU	28	-3	3.78	0.66	EUGENE	43	-2	1.23	-7.21
KODIAK	43	9	12.55	5.92	PORTLAND	36	-2	2.96	-1.76	MEDFORD	47	3	0.24	-2.69
NOME	21	4	0.31	-0.97	MD BALTIMORE	44	-2	1.10	-2.02	PENDLETON	40	-1	0.27	-1.36
AZ FLAGSTAFF	38	1	6.69	4.83	MA BOSTON	43	-2	3.39	-0.59	PORTLAND	47	1	1.52	-4.09
PHOENIX	66	4	1.56	0.83	WORCESTER	36	-4	2.60	-1.74	SALEM	44	-1	0.72	-5.67
TUCSON	64	5	2.36	1.69	MI ALPENA	31	-4	2.66	0.58	PA ALLENTOWN	40	-2	1.63	-2.07
AR FORT SMITH	49	-2	4.41	-0.39	DETROIT	36	-5	3.11	0.45	ERIE	39	-4	2.76	-1.20
LITTLE ROCK	47	-5	4.21	-1.52	FLINT	35	-3	2.08	-0.57	MIDDLETOWN	42	-2	1.84	-1.68
CA BAKERSFIELD	58	3	1.07	0.48	GRAND RAPIDS	35	-3	2.64	-0.71	PHILADELPHIA	43	-4	1.11	-2.05
EUREKA	47	-4	1.27	-4.51	HOUGHTON LAKE	29	-6	2.05	-0.09	PITTSBURGH	38	-4	1.56	-1.46
FRESNO	58	5	0.56	-0.54	LANSING	33	-5	1.78	-0.88	WILKES-BARRE	38	-4	1.73	-1.39
LOS ANGELES	64	2	1.43	0.30	MUSKEGON	36	-3	3.46	0.23	WILLIAMSPORT	38	-3	1.81	-1.81
REDDING	57	6	1.98	-2.05	TRAVERSE CITY	33	-4	2.06	-0.61	PR SAN JUAN	82	2	4.31	-1.86
SACRAMENTO	56	3	0.54	-1.65	MN DULUTH	26	-2	2.36	0.24	RI PROVIDENCE	40	-4	2.75	-1.65
SAN DIEGO	63	1	2.74	1.67	INT'L FALLS	23	-1	0.85	-0.51	SC CHARLESTON	54	-4	3.44	0.78
SAN FRANCISCO	56	1	1.29	-1.20	MINNEAPOLIS	31	-2	2.34	0.40	COLUMBIA	51	-4	3.04	0.16
STOCKTON	56	3	0.87	-0.90	ROCHESTER	28	-3	2.91	0.90	FLORENCE	51	-4	3.07	0.48
CO ALAMOSA	30	2	0.44	-0.04	ST. CLOUD	28	-1	1.50	-0.04	GREENVILLE	49	-2	3.44	-0.35
CO SPRINGS	38	2	0.90	0.38	MS JACKSON	52	-3	1.39	-3.65	MYRTLE BEACH	53	-4	3.27	0.30
DENVER	36	-1	0.89	0.29	MERIDIAN	53	-3	1.81	-3.14	SD ABERDEEN	30	1	1.17	0.42
GRAND JUNCTION	40	2	0.87	0.16	TUPELO	49	-2	5.76	0.75	HURON	32	1	1.13	0.24
PUEBLO	39	1	0.49	-0.09	MO COLUMBIA	42	-1	2.12	-1.35	RAPID CITY	33	0	1.09	0.48
CT BRIDGEPORT	42	-3	1.08	-2.57	JOPLIN	45	-2	2.55	-1.51	SIOUX FALLS	32	1	1.15	-0.21
HARTFORD	40	-2	2.14	-1.92	KANSAS CITY	41	-2	0.93	-1.37	TN BRISTOL	44	-2	4.59	1.51
DC WASHINGTON	46	-3	1.40	-1.63	SPRINGFIELD	43	-3	3.24	-1.22	CHATTANOOGA	49	-1	4.63	-0.25
DE WILMINGTON	43	-3	1.17	-2.02	ST JOSEPH	39	-3	0.35	-1.81	JACKSON	47	-3	4.77	-0.30
FL DAYTONA BEACH	66	-1	1.75	-1.28	ST LOUIS	42	-3	3.58	-0.13	KNOXVILLE	46	-3	6.22	2.24
FT LAUDERDALE	74	0	5.93	1.36	MT BILLINGS	35	1	0.96	0.21	MEMPHIS	48	-4	4.32	-1.44
FT MYERS	73	1	0.61	-1.10	BUTTE	29	2	0.20	-0.40	NASHVILLE	46	-3	5.39	0.94
JACKSONVILLE	60	-2	3.69	1.35	GLASGOW	28	0	0.98	0.59	TX ABILENE	53	-1	2.02	0.72
KEY WEST	78	2	1.04	-1.60	GREAT FALLS	31	-1	1.29	0.70	AMARILLO	44	-1	0.89	0.21
MELBOURNE	69	0	1.51	-1.61	HELENA	32	1	0.82	0.34	AUSTIN	57	-3	0.65	-2.03
MIAMI	76	2	1.63	-1.80	KALISPELL	30	-1	1.00	-0.45	BEAUMONT	60	-1	1.31	-3.44
ORLANDO	69	0	1.19	-1.13	MILES CITY	32	0	0.19	-0.33	BROWNSVILLE	68	0	0.45	-1.30
PENSACOLA	60	-1	1.09	-3.37	MISSOULA	32	0	0.81	-0.15	COLLEGE STATION	59	-1	1.28	-1.90
ST PETERSBURG	70	0	0.73	-1.31	NE GRAND ISLAND	38	2	1.43	0.02	CORPUS CHRISTI	63	-2	4.28	2.54
TALLAHASSEE	58	-2	0.87	-2.99	HASTINGS	38	1	0.67	-0.79	DALLAS/FT WORTH	54	-1	1.80	-0.77
TAMPA	69	0	0.56	-1.06	LINCOLN	37	-1	0.79	-0.79	DEL RIO	61	1	0.59	-0.37
WEST PALM BEACH	73	0	3.22	-2.33	MCCOOK	38	0	0.48	-0.61	EL PASO	54	1	1.74	1.32
GA ATHENS	52	-1	2.15	-1.56	NORFOLK	35	0	1.76	0.32	GALVESTON	63	-2	2.61	-1.03
ATLANTA	53	0	2.68	-1.42	NORTH PLATTE	36	1	0.62	-0.14	HOUSTON	60	-1	1.12	-3.07
AUGUSTA	53	-1	2.63	-0.05	OMAHA/EPPLEY	37	-1	0.95	-0.87	LUBBOCK	48	0	1.06	0.35
COLUMBUS	55	-2	3.84	-0.13	SCOTTSBLUFF	36	2	1.11	0.31	MIDLAND	53	1	1.35	0.70
MACON	53	-2	2.93	-0.29	VALENTINE	35	2	1.31	0.59	SAN ANGELO	55	1	1.18	0.08
SAVANNAH	56	-3	6.19	3.79	NV ELKO	38	3	0.22	-0.83	SAN ANTONIO	59	-1	0.76	-1.82
HI HILO	78	4	10.30	-5.28	ELY	37	4	0.98	0.35	VICTORIA	61	-2	0.66	-1.98
HONOLULU	80	2	2.59	0.33	LAS VEGAS	58	3	1.06	0.75	WACO	55	-2	0.35	-2.26
KAHULUI	78	2	0.22	-1.95	RENO	46	5	0.41	-0.39	WICHITA FALLS	50	-2	2.26	0.58
LIHUE	77	1	4.98	0.28	WINNEMUCCA	39	2	0.37	-0.43	UT SALT LAKE CITY	42	2	1.17	-0.23
ID BOISE	41	1	0.06	-1.32	NH CONCORD	34	-4	3.50	-0.07	VT BURLINGTON	33	-4	3.18	0.12
LEWISTON	39	-1	0.63	-0.58	NJ ATLANTIC CITY	43	-3	1.48	-1.78	VA LYNCHBURG	43	-4	1.69	-1.49
POCATELLO	35	0	0.15	-0.98	NEWARK	43	-3	1.50	-2.38	NORFOLK	51	-1	1.96	-1.02
IL CHICAGO/O'HARE	35	-4	1.80	-1.21	NM ALBUQUERQUE	44	0	1.99	1.37	RICHMOND	46	-3	1.82	-1.24
MOLINE	35	-4	2.46	-0.27	NY ALBANY	37	-2	2.61	-0.67	ROANOKE	44	-3	1.29	-1.92
PEORIA	37	-3	1.81	-1.18	BINGHAMTON	33	-5	1.66	-1.66	WASH/DULLES	42	-3	1.63	-1.68
ROCKFORD	33	-4	1.88	-0.75	BUFFALO	36	-4	1.81	-2.11	WA OLYMPIA	42	0	1.74	-6.39
SPRINGFIELD	37	-5	2.09	-0.78	ROCHESTER	35	-5	1.65	-1.19	QUILLAYUTE	45	1	6.69	-8.13
IN EVANSVILLE	40	-6	5.96	1.78	SYRACUSE	36	-4	1.24	-2.53	SEATTLE-TACOMA	47	2	1.71	-4.19
FORT WAYNE	36	-5	1.67	-1.31	NC ASHEVILLE	46	0	2.58	-1.24	SPOKANE	36	1	0.68	-1.56
INDIANAPOLIS	38	-5	2.69	-0.92	CHARLOTTE	49	-3	3.40	0.04	YAKIMA	37	0	0.04	-1.01
SOUTH BEND	36	-4	1.61	-1.78	GREENSBORO	46	-3	3.33	0.37	WV BECKLEY	40	-3	2.30	-0.58
IA BURLINGTON	37	-4	1.17	-1.55	HATTERAS	57	-1	5.06	0.13	CHARLESTON	42	-4	2.98	-0.68
CEDAR RAPIDS	32	-5	1.05	-1.19	RALEIGH	48	-3	3.27	0.30	ELKINS	39	-2	1.31	-2.11
DES MOINES	35	-3	1.47	-0.63	WILMINGTON	53	-3	4.62	1.36	HUNTINGTON	41	-5	3.10	-0.22
DUBUQUE	31	-5	1.82	-0.67	ND BISMARCK	29	1	0.84	0.14	WI EAU CLAIRE	30	-2	2.06	0.14
SIOUX CITY	35	0	1.13	-0.27	DICKINSON	28	-1	0.09	-0.50	GREEN BAY	31	-3	2.99	0.72
WATERLOO	33	-2	1.81	-0.29	FARGO	28	1	0.67	-0.39	LA CROSSE	32	-3	2.75	0.65
KS CONCORDIA	42	1	0.56	-0.89	GRAND FORKS	25	-1	0.95	-0.04	MADISON	31	-4	2.63	0.32
DODGE CITY	42	0	0.20	-0.81	JAMESTOWN	27	0	0.13	-0.58	MILWAUKEE	34	-4	2.15	-0.55
GOODLAND	38	1	0.75	-0.07	MINOT	28	1	0.43	-0.43	WAUSAU	28	-4	1.99	-0.21
HILL CITY	40	0	0.62	-0.12	WILLISTON	***	***	***	***	WY CASPER	31	-1	1.89	1.07
TOPEKA	42	-1	1.22	-1.09	OH AKRON-CANTON	38	-3	1.61	-1.43	CHEYENNE	34	1	6.67	6.03
WICHITA	44	0	0.65	-1.17	CINCINNATI	40	-5	3.11	-0.35	LANDER	31	1	2.24	1.25
KY JACKSON	43	-5	5.83	1.63	CLEVELAND	39	-3	1.70	-1.68	SHERIDAN	31	0	1.43	0.63

Based on 1971-2000 normals

***** Not Available**

National Agricultural Summary

December 2 – 8, 2019

Weekly National Agricultural Summary provided by USDA/NASS

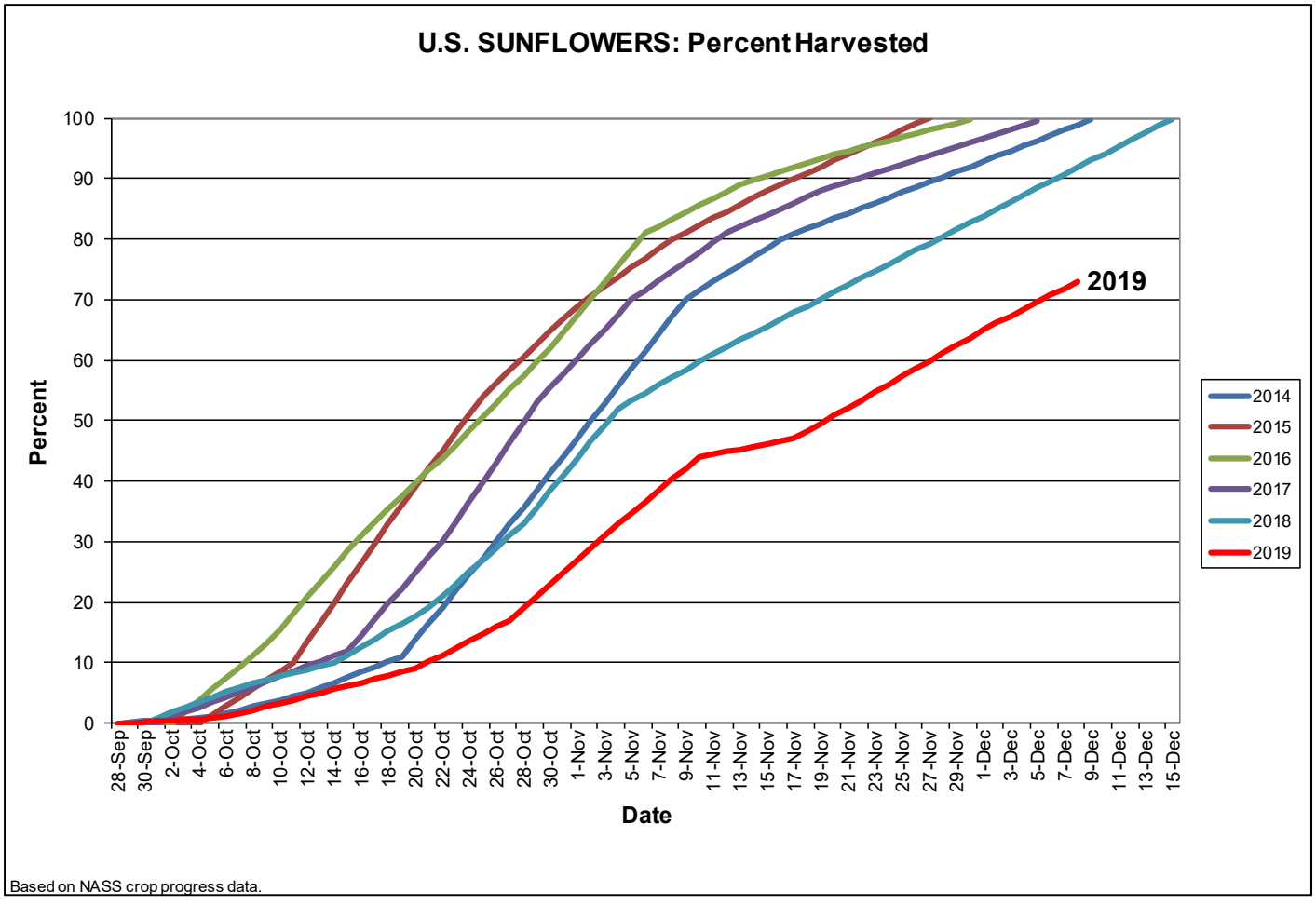
HIGHLIGHTS

Most of the nation received below-normal precipitation during the week. In contrast, much of the Far West and parts of the Northeast received above-normal precipitation. Portions of California received at least 4 inches of precipitation. Weekly temperatures were more than 3°F above normal for much of the Rocky Mountains and Great Plains, with some areas of Montana experiencing temperatures more than 9°F above normal. Temperatures were below normal in the mid-Atlantic, Northeast, and Southeast regions. Temperatures were 6°F or more below normal in parts of the Northeast, Florida, and Wyoming.

Corn: Ninety-two percent of the 2019 acreage was harvested by week's end, 8 percentage points behind last year and 8 points behind the 5-year average pace. Harvest progress was behind the 5-year average by 21 percentage points or more in Michigan and Wisconsin.

Cotton: By December 8, eighty-nine percent of the nation's cotton acreage was harvested. Harvest progress advanced 8 percentage points or more from the previous week in Kansas, Oklahoma, and Texas.

Sunflowers: By December 8, seventy-three percent of this year's sunflower crop was harvested, an increase of 8 percentage points from the previous week. (The previous record for the fewest sunflowers harvested on that date was 92 percent in 2018.) Harvest progress in Colorado and Kansas was ahead of last year's pace by 5 and 6 percentage points, respectively. This season's harvest progress in North Dakota and South Dakota, which has been well behind last year's pace and the 5-year average, reached 60 and 79 percent, respectively.



Crop Progress and Condition

Week Ending December 8, 2019

Weekly U.S. Progress and Condition Data provided by USDA/NASS

Corn Percent Harvested

	Prev Year	Prev Week	Dec 8 2019	5-Yr Avg
CO	100	98	99	100
IL	100	93	96	100
IN	100	93	96	99
IA	100	92	95	100
KS	98	99	100	99
KY	100	100	100	100
MI	99	66	74	96
MN	100	91	93	100
MO	100	95	98	100
NE	NA	96	98	NA
NC	100	100	100	100
ND	NA	36	43	NA
OH	94	90	93	99
PA	82	86	91	88
SD	NA	80	83	NA
TN	100	100	100	100
TX	98	100	100	99
WI	96	66	74	95
18 Sts	100	89	92	100

These 18 States harvested 94% of last year's corn acreage.

Cotton Percent Harvested

	Prev Year	Prev Week	Dec 8 2019	5-Yr Avg
AL	NA	94	96	NA
AZ	84	86	91	84
AR	100	99	100	100
CA	89	93	95	94
GA	NA	89	93	NA
KS	NA	71	82	NA
LA	100	100	100	100
MS	98	97	98	100
MO	100	95	98	97
NC	89	93	96	93
OK	NA	83	91	NA
SC	NA	95	96	NA
TN	97	95	97	99
TX	NA	74	82	NA
VA	97	95	98	99
15 Sts	NA	83	89	NA

These 15 States harvested 99% of last year's cotton acreage.

Sunflowers Percent Harvested

	Prev Year	Prev Week	Dec 8 2019	5-Yr Avg
CO	94	98	99	99
KS	93	97	99	96
ND	NA	51	60	NA
SD	NA	71	79	NA
4 Sts	NA	65	73	NA

These 4 States harvested 86% of last year's sunflower acreage.

VP - Very Poor; P - Poor; F - Fair; G - Good; EX - Excellent

NA - Not Available; *Revised

International Weather and Crop Summary

December 1-7, 2019

International Weather and Crop Highlights and Summaries provided by USDA/WAOB

HIGHLIGHTS

EUROPE: The coldest air of the season ushered winter crops toward or into dormancy over much of the continent, while wet conditions continued in southern- and northern-most growing areas.

MIDDLE EAST: Moderate to heavy rain alleviated lingering drought concerns in western and central portions of the region.

NORTHWESTERN AFRICA: Rain eased drought in southwestern Morocco, while conditions remained favorable elsewhere for winter grain establishment.

SOUTHEAST ASIA: Typhoon Kammuri brought drenching rainfall to the northern and central Philippines.

AUSTRALIA: Showers increased local moisture supplies for summer crops but much more rain is needed.

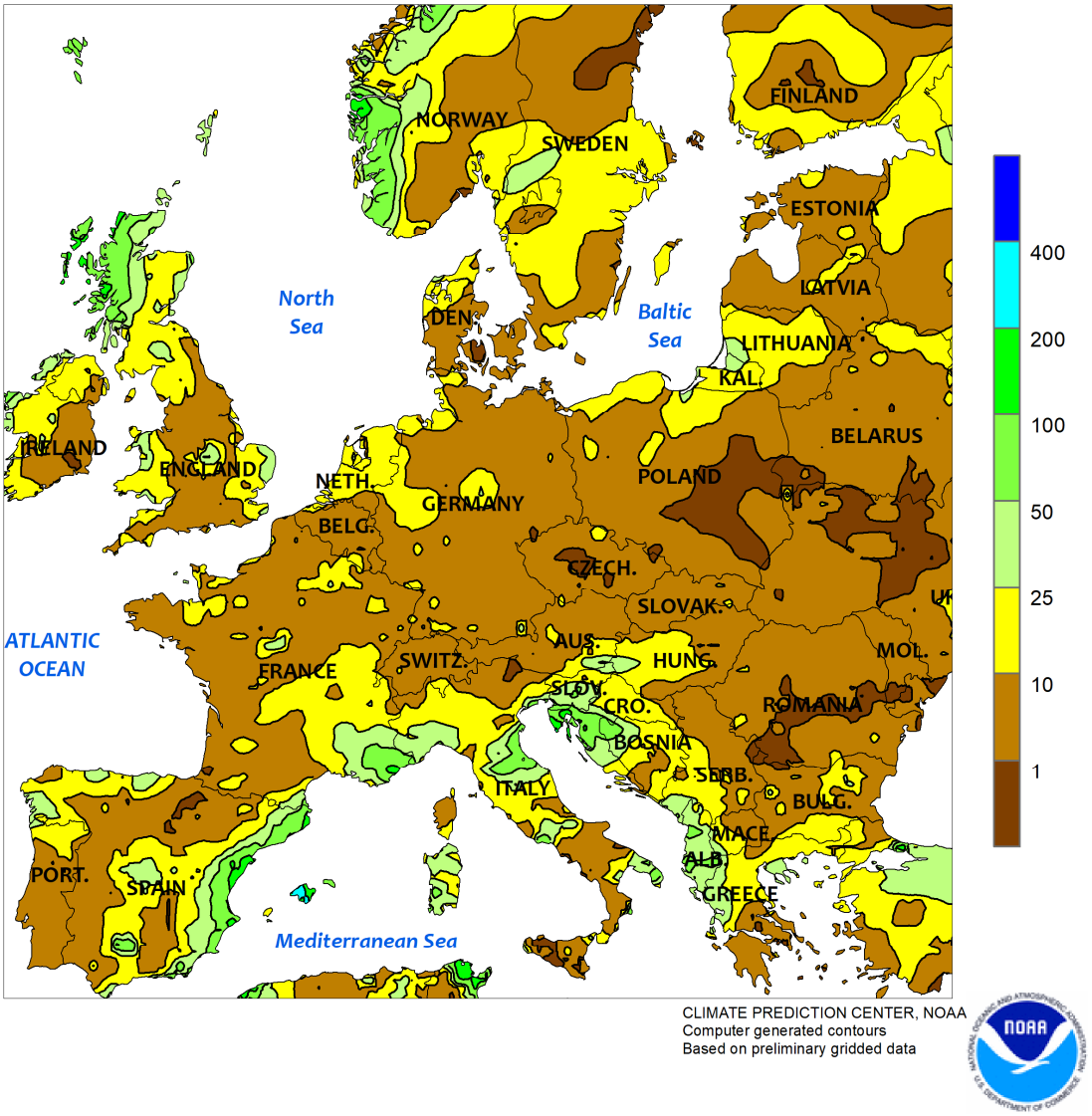
SOUTH AFRICA: Moderate to heavy showers benefited emerging to vegetative summer crops across the corn belt.

ARGENTINA: Drier weather supported corn and soybean planting in major production areas of central Argentina.

BRAZIL: Widespread showers maintained overall favorable conditions for soybeans and other summer crops.

For additional information contact: mbrusberg@oce.usda.gov

EUROPE
Total Precipitation (mm)
December 1 - 7, 2019

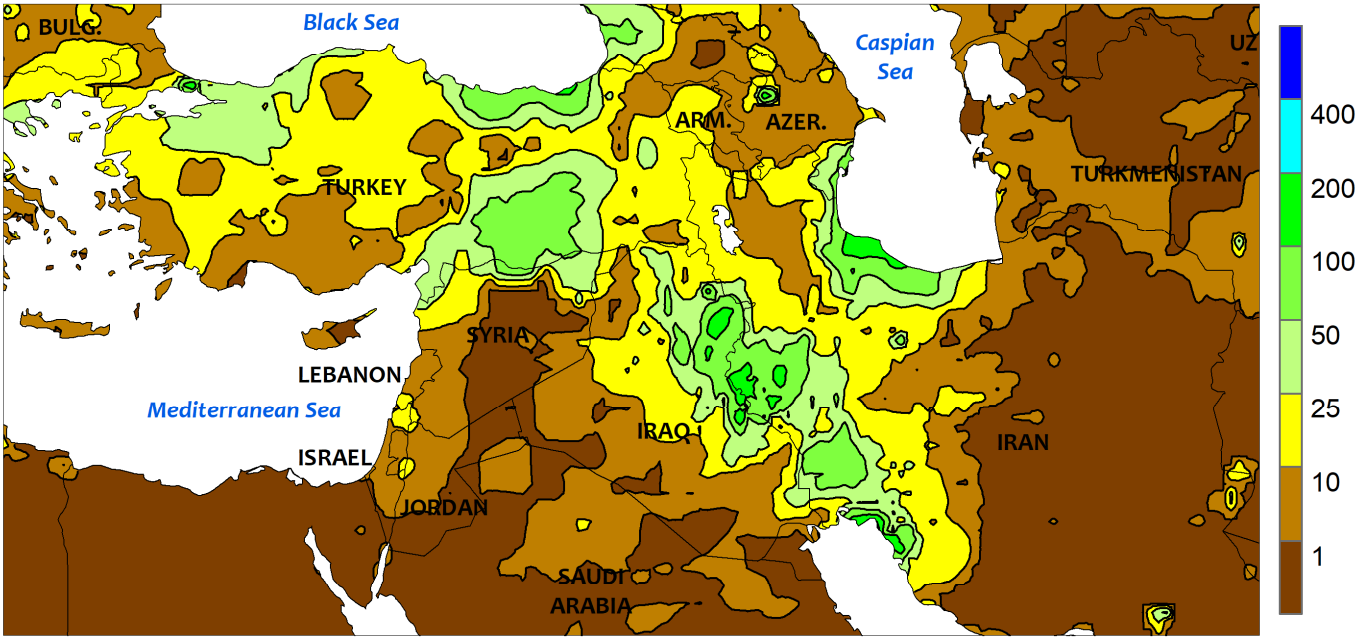


EUROPE

Colder conditions arrived over much of the continent, while wet weather in southern- and northern-most portions of Europe contrasted with drier conditions elsewhere. The blocking high which had locked in a mostly wet weather pattern over the last several weeks weakened and shifted east, allowing colder air to overspread much of Europe; temperatures for the week averaged near to below normal (up to 3°C below normal) from England and France southeastward into the Balkans. Furthermore, 7-day average temperatures below 5°C (an indicator of winter crop dormancy) were noted from France eastward, while hard freezes (nighttime temperatures as low as -11°C) in the Balkans indicated winter wheat and rapeseed were hastened into dormancy. Overall, winter crops entered dormancy in fair to good condition due in part to a very wet October and November, though the soggy conditions impeded late summer crop harvesting and other seasonal fieldwork. While light showers (1-5 mm) were noted across nearly all of Europe during the past week, rain was heaviest (10-100 mm, locally more) from Spain eastward into Greece and the western Balkans as well as croplands adjacent to the North and Baltic Seas in the north. Overall, moisture supplies remained adequate to abundant for winter crops, though short-term dryness (30-day precipitation less than 50 percent of normal) was developing in southern and eastern Germany as well as central and northeastern Poland.

For additional information contact: mbrusberg@oce.usda.gov

MIDDLE EAST
Total Precipitation (mm)
December 1 - 7, 2019



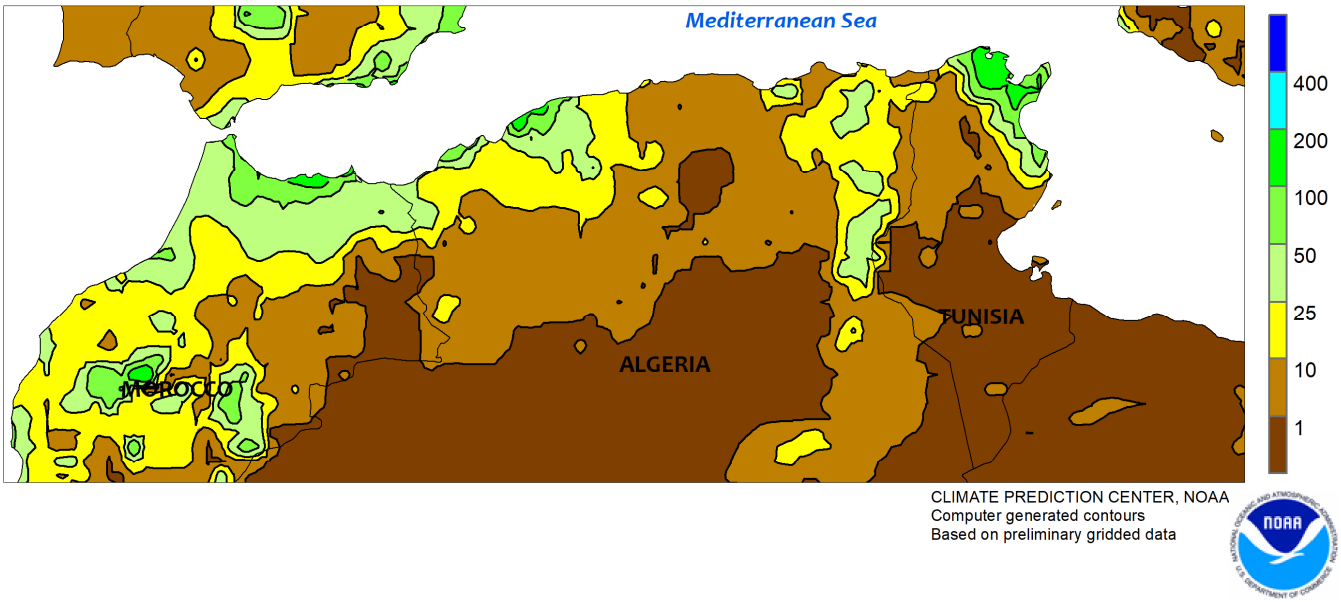
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded data

MIDDLE EAST

A slow-moving Mediterranean storm system eased lingering drought concerns across central and western growing areas. The storm produced 10 to 30 mm of rain across central Turkey's Anatolian Plateau, a key winter grain region, although longer-term deficits lingered; the moisture was sorely needed following one of the driest autumns on record. Furthermore, weekly average temperatures below 5°C indicated the window for winter crop establishment had closed in central Turkey. As a result, wheat and barley entered dormancy in very poor shape on the Anatolian Plateau, and crops will need plentiful spring precipitation to improve yield prospects. Farther south and east, moderate to heavy rain (10-85 mm, locally more) ended drought concerns from eastern Turkey and northern Syria into western Iran, although the precipitation largely bypassed wheat areas in northwestern Iran (2-10 mm). Farther east, sunny skies and mild temperatures (up to 4°C above normal) favored wheat and barley establishment in eastern Iran.

For additional information contact: mbrusberg@oce.usda.gov

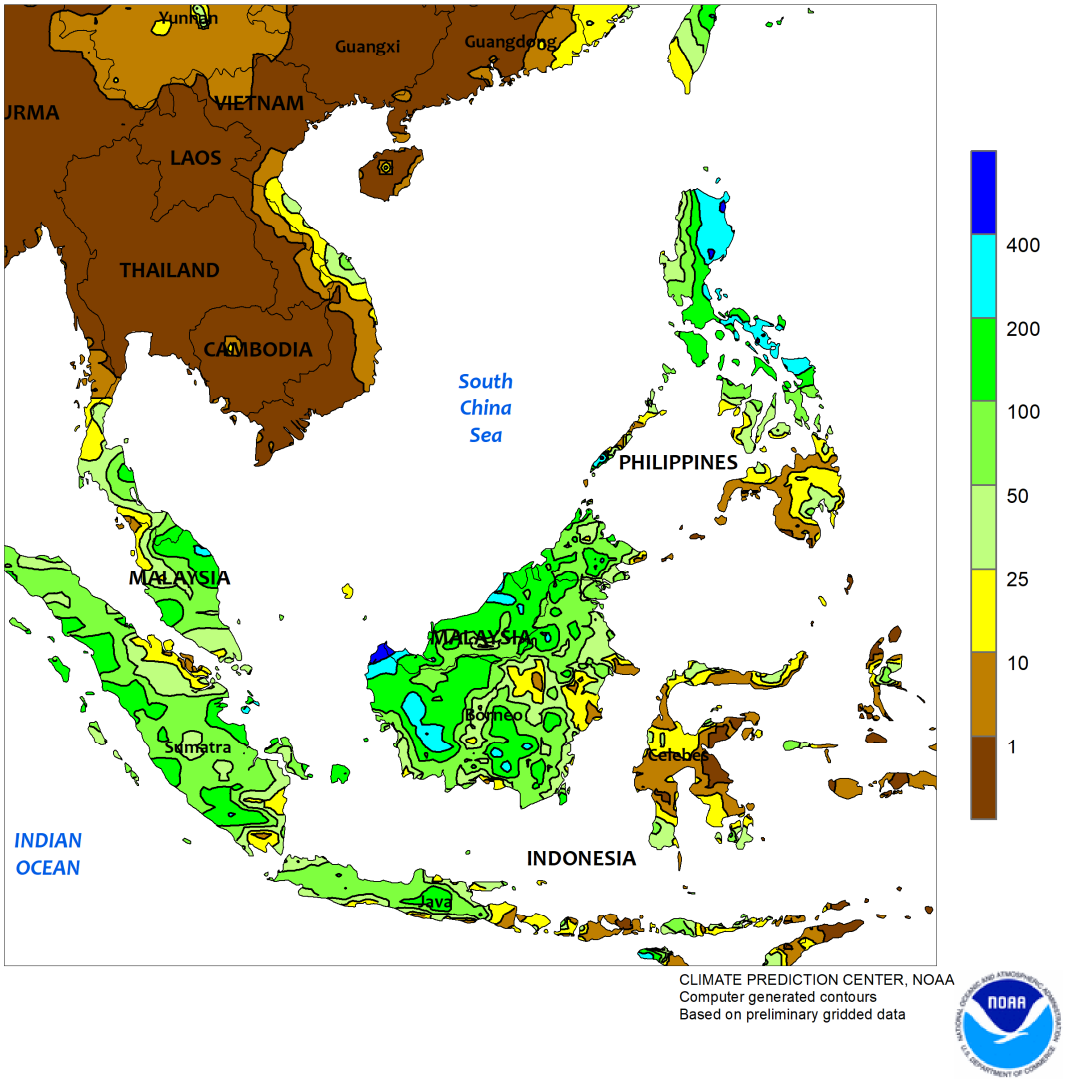
NORTHWESTERN AFRICA
Total Precipitation (mm)
December 1 - 7, 2019



NORTHWESTERN AFRICA

Rain expanded across the western half of the region, while drier, warmer conditions were noted farther east. A slow-moving storm system produced moderate to heavy rainfall (10-50 mm, locally more near the coast) across Morocco and western Algeria. The wet weather alleviated localized drought in southwestern Morocco and boosted moisture supplies on the heels of a wet autumn from northern Morocco into Algeria. Farther east, mostly sunny skies and mild temperatures (1-3°C above normal) facilitated wheat and barley establishment from central Algeria into northern Tunisia.

SOUTHEAST ASIA
Total Precipitation (mm)
December 1 - 7, 2019

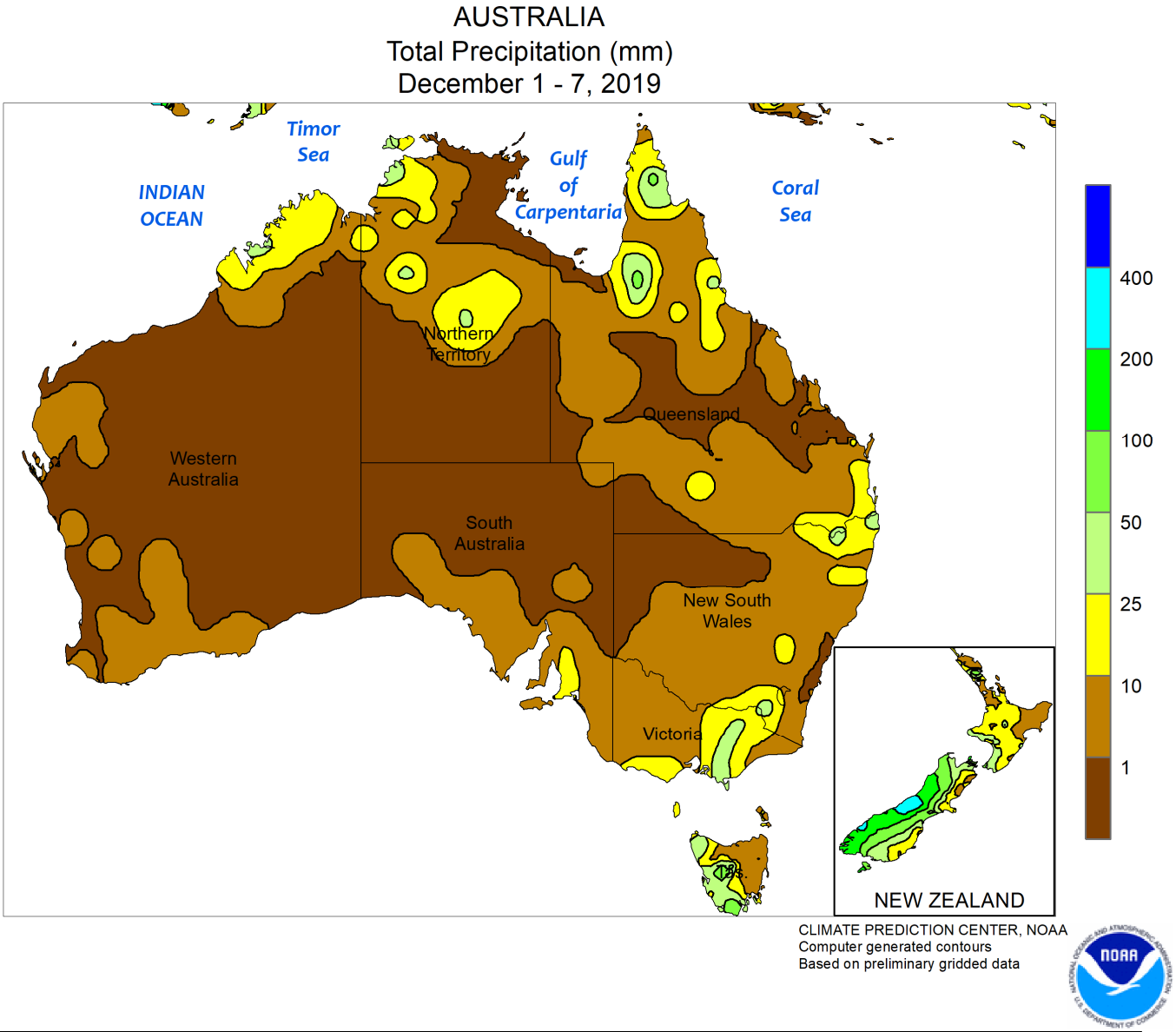


CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded data

SOUTHEAST ASIA

Typhoon Kammuri cut a path across the central Philippines around mid week, producing drenching rainfall (over 100 mm) in the Visayas and Luzon. Despite some localized flooding, the rain boosted moisture supplies, including reservoirs, for winter rice and corn. Meanwhile, the wet season was officially underway in Java, Indonesia, after a delay of over a month. Showers (25-100 mm) overspread much of Java, but the delayed onset of seasonal rainfall discouraged rice sowing in favor of corn. Elsewhere in Indonesia and Malaysia, rainfall continued to improve moisture conditions for oil palm, with most locales receiving over 50 mm (locally over 100 mm). While short-term moisture is near normal, longer-term deficits remained, reducing yields for the current harvestable crop.

For additional information contact: mbrusberg@oce.usda.gov



AUSTRALIA

In eastern Australia, scattered showers (5-15 mm, locally more) increased local moisture supplies for recently planted cotton and sorghum. A large portion of the area received little or no rainfall, however, keeping long-term drought firmly entrenched and vegetative summer crops unfavorably dry. Winter grain and oilseed harvesting continued in eastern Australia, and fieldwork progressed without delay in the drier areas. Elsewhere in the wheat belt, mostly dry weather covered South Australia and Western Australia, aiding winter crop drydown while promoting uninterrupted wheat, barley, and canola harvesting. Temperatures averaged 3 to 6°C above normal in western Australia, 2 to 5°C below normal in southeastern Australia, and near normal in northeastern Australia.

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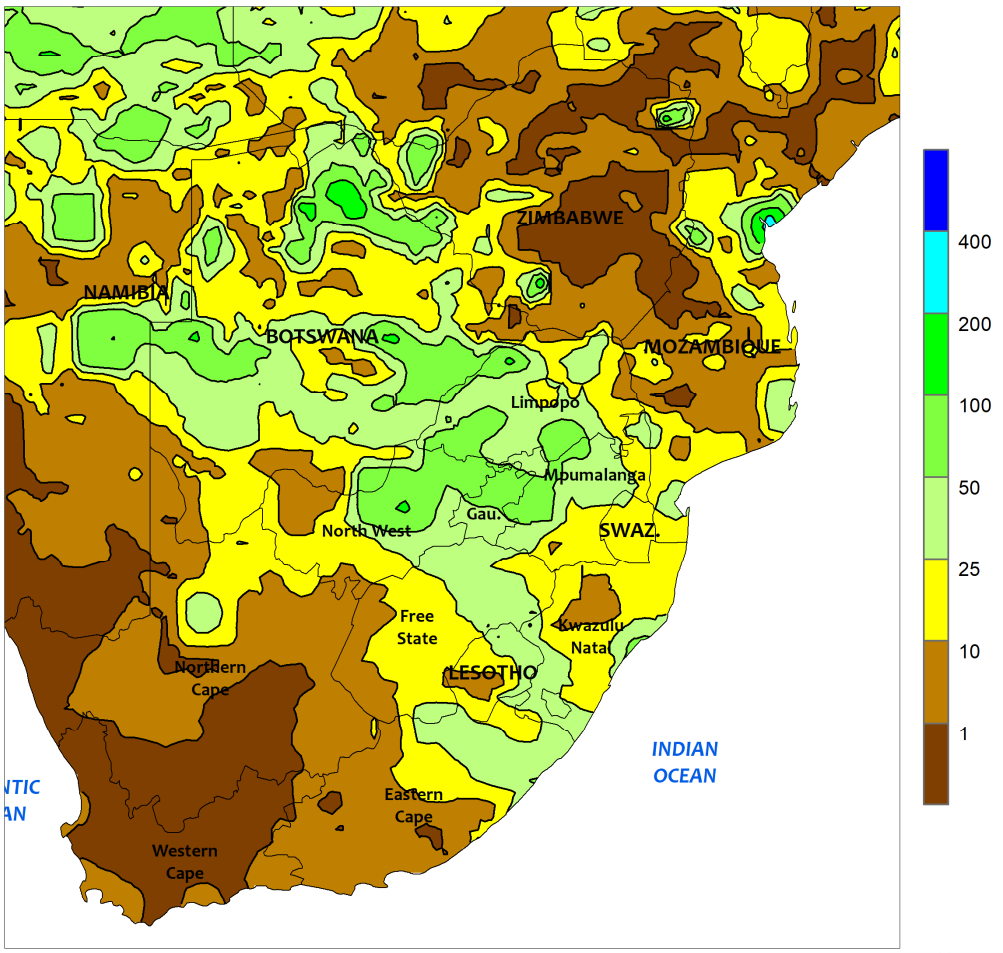
SOUTH AFRICA
Total Precipitation (mm)
December 1 - 7, 2019



CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded data

SOUTH AFRICA

Widespread, moderate to heavy showers benefited emerging to vegetative summer crops in key eastern commercial farming areas. Rainfall totaled 25 to 50 mm or more — locally exceeding 100 mm — throughout much of the corn belt (Free State and North West northeastward through Mpumalanga and Limpopo), accounting for the heaviest rainfall in many locations thus far in the season. Similar amounts were recorded in southwestern KwaZulu-Natal and neighboring sections of Eastern Cape, boosting moisture for sugarcane and other rain-fed summer crops; however, somewhat lighter rain (less than 25 mm) fell in irrigated sugarcane areas in northern KwaZulu-Natal. Although weekly temperatures averaged several degrees C below normal, daytime highs occasionally reached the lower and middle 30s (degrees C) and the upper 30s in outlying western and northern farming areas, maintaining high evaporative losses. Elsewhere, dry, warmer-than-normal weather dominated the remainder of the Cape Provinces, maintaining high growth rates of irrigated summer crops, including fruit crops in Western Cape as well as corn and cotton in the Orange River Valley.

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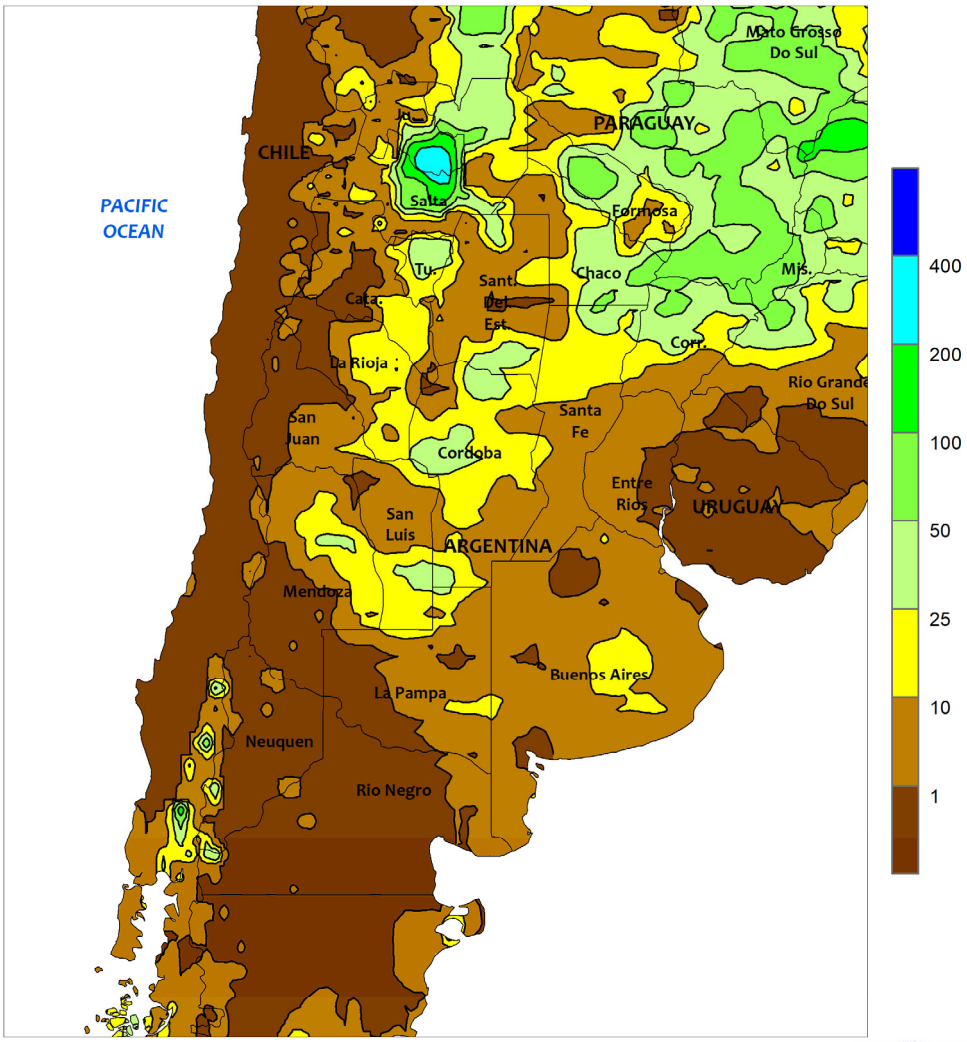
ARGENTINA
Total Precipitation (mm)
December 1 - 7, 2019



CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded data

ARGENTINA

Following recent periods of beneficial rain, drier conditions supported planting of summer grains and oilseeds in central Argentina. Although rainfall totaled 10 to 25 mm in northern and central Cordoba and parts of eastern Buenos Aires, mostly dry weather prevailed elsewhere from Entre Rios and southern Santa Fe southward. Weekly temperatures averaged near to slightly below normal throughout the aforementioned areas but daytime highs occasionally reached the lower and middle 30s degrees C from La Pampa and southern Santa Fe northwestward, maintaining high losses through evaporation. Farther north, moderate to heavy showers (25-50 mm or more) stretched from Salta eastward through Corrientes, increasing moisture for germination and establishment of summer crops, including cotton. According to the government of Argentina, sunflowers were 93 percent planted as of December 5 versus 98 percent last year; in addition, corn and soybeans were 56 and 55 percent planted, respectively, and cotton was 73 percent planted. Meanwhile, wheat was 44 percent harvested, on par with last year's pace.

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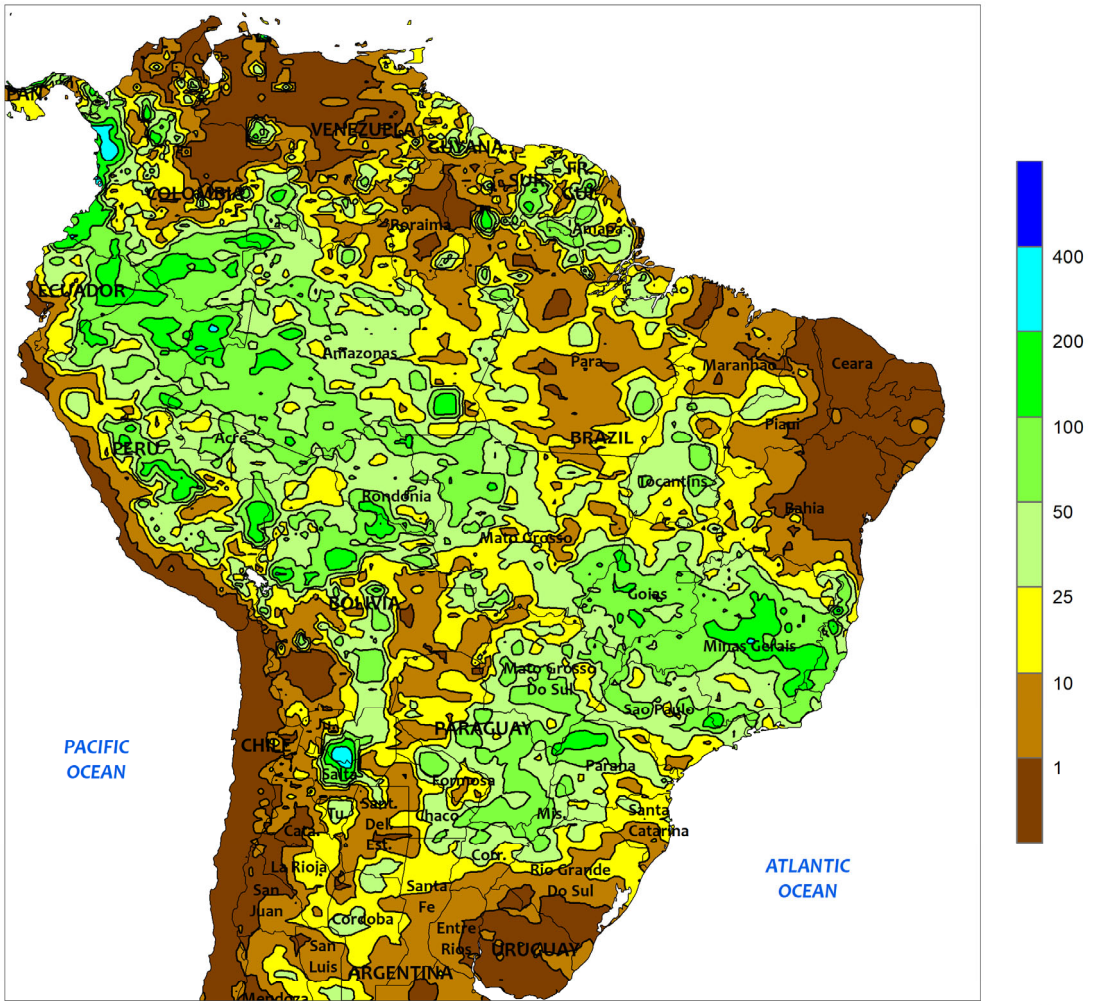
BRAZIL
Total Precipitation (mm)
December 1 - 7, 2019



CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded data

BRAZIL

Seasonal rainfall continued throughout most major agricultural areas. In northern farming areas, rainfall totaled 25 to more than 50 mm from Mato Grosso and Mato Grosso do Sul northeastward to western Bahia, with somewhat drier weather in the far northeastern interior (Piaui and Maranhao). Summer warmth (daytime highs often reaching the middle 30s degrees C) maintained high moisture demands of soybeans and other summer crops. Similar amounts of rainfall were recorded in southeastern Brazil (Parana to Sao Paulo), improving conditions for corn and soybeans, as well as sugarcane, though heaver rain (greater than 100 mm) fell in coffee areas of southern Minas Gerais. According to the government of Parana, first-crop corn and soybeans were 45 and 27 percent reproductive to filling, respectively, as of December 4. Warm, somewhat drier weather dominated Rio Grande do Sul; corn and soybeans were 88 and 83 percent planted, respectively, as of December 5, with 50 percent of corn in the reproductive to filling stages of development.

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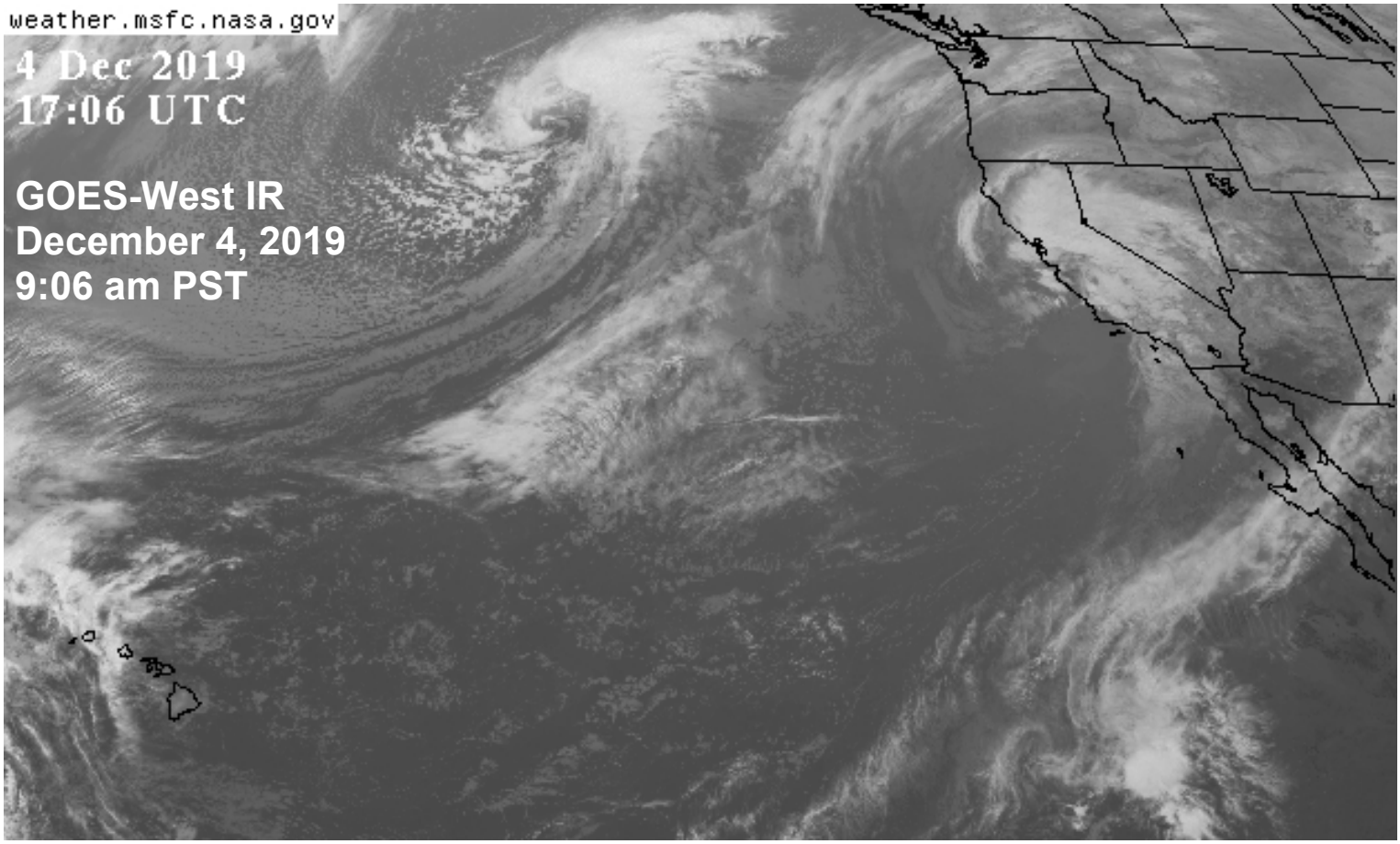

In recent weeks, anomalously high sea-surface temperatures across much of the North Pacific have contributed to energetic storm systems, some of which have affected California, the Great Basin, and the Southwest. By early December, most river basins in Arizona were reporting mountain snowpack greater than 400 percent of normal for this time of year. On December 4 (see satellite image), a low-pressure system was moving ashore in California, while a closely trailing storm was generating unsettled weather over open water of the North Pacific.

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